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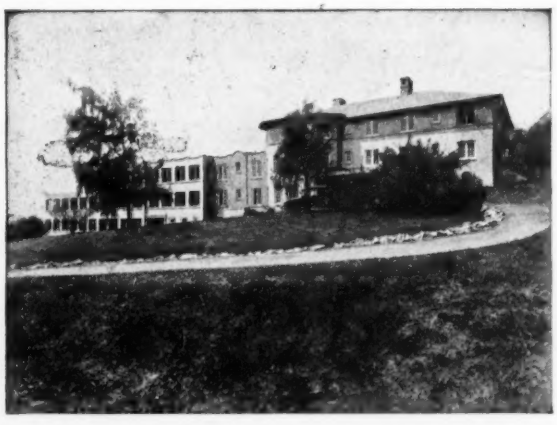

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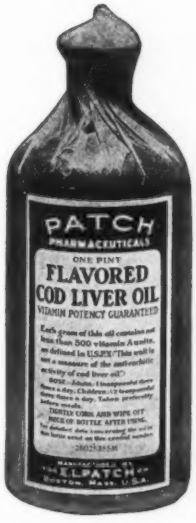

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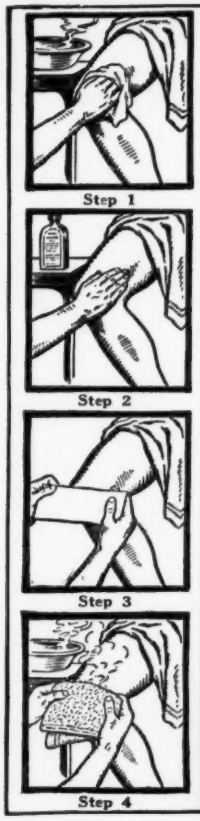

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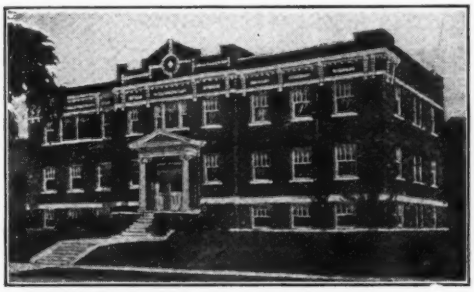

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Vol. XXVII APRIL, 1928 No. 8

A Symposium on Foot Technic

PAPERS COLLECTED BY DR. EARL J. DRINKALL

An Osteopathic Method of Treating the Feet

EARL J. DRINKALL, D.O.
Chicago

No profession today can equal the osteopathic in its method of treating feet. Only the osteopathic physician can go to any part of the body and remove the cause of symptoms in the feet.

The functions of the feet depend upon their structure. Most abnormal foot conditions have been blamed on shoes, but for the moment think only of our own particular theory with reference to the cause of disease and conditions—disturbed structure, for herein lies the key to foot troubles.

Aches and pains, burning, corns, callouses, bunions, fallen or broken arches, relaxed feet, rigid feet, hammer toe, Morton's toe, heel pains, effects from injuries, cramps, hump or cavus foot, flat-foot, dropped ankle, depressed and raised proximal head of the first metatarsal bone, soft corns are the common foot troubles. The true surgical condition is usually the result of a gross disturbance of structure. The surgical method of correction is explained in another article.

STRUCTURE

In order to understand effects or symptoms found in the feet it is essential that we know their anatomical construction. The basic structure is made of the twenty-six bones. Next in importance is the ligamentous structure. Muscles do not support the feet but only move the bones and, except for their diagnostic value, they can be set aside. The nerves and the blood and lymph vessels will adjust themselves as the cause of the ill condition is removed.

There are more than ten arches in the foot. There are five major arches, and for all practical purposes we need memorize only these, and carry with us a mental picture of their construction.

The most important is the transverse arch at the instep which is composed of the cuboid, external, middle and internal cuneiform bones. This is called the posterior transverse arch. Next in importance is the middle transverse arch composed of the proximal heads of the five metatarsal bones. And then the anterior transverse arch composed of the distal heads of the five metatarsal bones at the ball of the foot.

These three transverse arches are the most important because they are most frequently in trouble and in need of adjustment to cure foot ailments.

The internal longtitudinal arch composed of the great toe, first metatarsal bone, internal cuneiform, scaphoid or navicular, and os calsis or calcaneum, is the most important of the longitudinal arches. Next is the external longitudinal arch composed of the little toe, fifth metatarsal bone, cuboid and os calsis.

The ligaments holding the bones of the foot together are too numerous to name, but they are the toughest in the body and usually short in length. When the ankle is turned ever so slightly the fibers of these ligaments are strained and at times torn. The more severe sprains and strains cause greater tears. Nature, in her effort to maintain the structure of the foot in its proper balance, thickens injured ligaments and these thickenings in turn hold the bones out of position. As time goes along these thickenings become thicker, the bones are forced further out of their proper positions, and symptoms begin to appear.

A few peculiarities of some of the bones should be borne in mind. The os calsis or calcaneum has its greater bulk placed mesial to the center of the foot, making it easy to rotate with its under border to the outside or lateral aspect of the foot. Although the mesial projection of the calcaneum comes underneath the astragalus, or talus, just beneath the internal malleolus, it does not always pull this bone out of position.

On the forward articulating surface of the os calsis there is a projection. This projection we must keep in mind as being very important, for it is immediately above a like projection on the posterior surface of the cuboid, and as the os calsis is rotated with its under border to the outside of the foot, this bony projection on the forward surface pushes down on the projection on the posterior surface of the cuboid and can do nothing else but push the inner border of the cuboid down. As the cuboid

bone is pushed down on its inner border it throws the fifth and fourth toes out and up, with their under borders away from the center of the foot.

Another bone with some peculiarities is the scaphoid, or navicular. The peculiarity of this bone is that it articulates with the cuboid and is above it as in the case of the os calsis, and when the foot is turned in at the ankle the tendency is for this bone to push down on the inner edge of the cuboid and throw it out of position.

The internal cuneiform is a wedge-shaped bone with the tip up and the wider part of the wedge down. This bone articulates with the middle cuneiform bone, which is a sharply wedge-shaped bone with the tip down and the broad surface up. Therefore, when this bone is in lesion it may either go straight down, down and in, or down and out from the center of the foot, which would be mesially. The three different directions in which the internal cuneiform bone may be in lesion with the middle cuneiform must be kept in mind in the adjustment part of the treatment.

The external cuneiform bone is wedge-shaped with the tip down. It is at the base of the third metatarsal bone and articulates with the cuboid. As the cuboid is forced out of position with its inner border down, the ligaments attaching from the cuboid to the external cuneiform bone pull it down and the wedge pulling down in the center of the posterior transverse arch, spreads this arch. As the posterior transverse arch falls, we have a falling or dropping of the anterior transverse arch, in the ratio of the distance from the posterior transverse arch to the anterior transverse arch. Both the anterior transverse arch and middle transverse arch are dependent upon the posterior transverse arch for their action, and when the posterior arch falls, these other two arches are likewise forced out of position.

It is within the range of possibility to have any number of the bones in the feet in lesion.

DIAGNOSIS

In examining feet I have found it convenient to have the patient sit in a chair while I sit upon a McManus stool, pushed down as far as it will go, at the left side and at a right angle to the patient, with the patient's foot upon my left knee. Usually an accurate diagnosis may be made with the stockings on. Run the thumb of your right hand over the tops of the toes and note which toes have corns on the tops of them, and which ones are turned up in a contracted condition, known as hammer toe, and then with the fingers of the right hand go around under the edge of the little and great toes and note any calloused formations on the body of the toes, or where these toes join the body of the foot. Then with your right hand go over the tops of the toes, so that the palm of your hand is under the toes and the thumb is along the side of the foot, extend the toes sharply and note whether the anterior transverse arch is curved up, or whether it is straight or curved down. Note whether there is any thickening of the soft tissues under the ball of the foot and also the presence of any calluses and exactly where these calluses are located — whether under the second, third or fourth toe.

Now with the toes extended, run the thumb of your left hand along the edge of the first metatarsal bone, across the joint between the first metatarsal bone and internal cuneiform bone, back along the edge of the cuboid and to the os calsis. Do this two or three times, going in deeper each time with the fleshy part of the thumb (not the tips), and note whether there is any thickening of the ligaments at the junction of the first metatarsal bone with the internal cuneiform. Hold this sore joint and with the thumb of the right hand place it just behind and above the thumb of the left hand, then bring the thumb of the left hand behind the thumb of the right hand and you will have the articulation between the internal cuneiform bone and the scaphoid. Note whether there is any thickening of the ligaments here which would indicate a lesion between the internal cuneiform and the scaphoid.

Hold this point between the internal cuneiform and the scaphoid and bring the right thumb over behind the left thumb and above it where you will find a little knob about the size of a pea, which is the protection of the scaphoid bone. Now bring your left thumb behind the right thumb and you have the articulation between the scaphoid and the astragalus. Any thickenings of the ligaments here would indicate a lesion, and it is this lesion which is the beginning of a flat foot. You will never have a flat foot, first, second or third degree, without a lesion between the scaphoid bone and the astragalus. The articulation between the scaphoid and the astragalus is a ball and socket joint, and although standing a great deal of abuse, will at times permit a rotation, and as this bone rotates there is a falling of the internal longitudinal arch, commonly called a flat foot.

Next, with the thumb of your right hand, if you are examining the right foot of the patient, or the third finger, if you are examining the left foot, note the ligaments just under the internal malleolus where the projection of the os calsis comes under the astragalus. If there is a lateral rotation of the os calsis, the ligaments between the os calsis and the astragalus will be on tension, and you will find a sore spot at this point, proving the lateral rotation of the heel bone.

Again extend the toes as you did a few minutes ago, and with your thumb at the great toe joint move it outward across the anterior transverse arch, noting whether the second metatarsal bone is lower than the first, the third lower than the second, the fourth higher than the third and the fifth still higher, or whether the fourth is lower than the third and the fifth still lower than the fourth. The head of the fourth metatarsal bone will not be lower than the third metatarsal unless the callus is under the fourth metartarsal head.

Again begin at the great toe joint and with your thumb come over to the head of the third metatarsal and then turn the thumb of your left hand in a longitudinal plane with the shaft of the third metatarsal bone and go down about two and a half inches toward the instep of the foot. If the external cuneiform bone is pulled out of position,

you will find a thickening at the junction of the third metatarsal bone and the external cuneiform.

Hold this position and with your right hand slide down along the fifth metatarsal bone on the top of the foot until you come to the end of the fifth metatarsal bone where you will find a very distinct notch and either swing your thumb or third finger under the foot for the first phalanx of your finger or thumb and then bring the left thumb down against this right thumb and you will find the articulation of the cuboid, os calsis and scaphoid bones. If the cuboid is in lesion you will find a very marked thickening of the ligaments at this point and, of course, a great deal of tenderness.

The middle cuneiform bone is placed very high between the internal and external cuneiform bones and is very hard to palpate, but a callus under the second toe is a positive proof that the middle cuneiform bone is out of its proper position.

With the foot still over your knee, examine the anterior and posterior ligaments at the articulation of the fibula with the astragalus and note whether the fibula has been rotated either posteriorly or anteriorly, which you will prove by the thickening of the ligaments at this point. Also to prove the condition, examine the upper head of the fibula where it articulates with the tibia just beneath the knee joint, and if the bone has been rotated posteriorly you will have a thickening of the anterior ligaments and a tenderness over them. This condition will be reversed if the fibula has been rotated anteriorly and the posterior ligaments will be thickened and tender.

SYMPTOMS AND THEIR CAUSE

Aches and *pains* in the feet may be due to disturbance of the circulation as a result of disturbed structure of the bones or ligaments of the foot. Usually, following these aches or pains back to the instep of the foot with a careful examination of the posterior transverse arch, particularly the cuboid and external cuneiform, will show lesions in these bones, which, if adjusted, will clear these conditions.

Again, these aches or pains may be due to a disturbance of the sciatic nerve at its origin—the fifth lumbar vertebra, or with the innominates and the sacrum.

As I said before, our profession is the only one in the world today which can go to either end of the line and remove causes of symptoms in the feet. Gout, arthritis and some other conditions which can give rise to pain in the feet are due to general systemic toxemias arising from the colon or from other parts of the body, and you will find nothing wrong with the structure of the feet. Your treatment is directed, therefore, to the cause in the vertebral column. From the other standpoint, there are many conditions such as backache, constipation, insomnia, etc., which are relieved by the adjustment of the disturbed structure in the feet. Wherever these conditions persist and do not yield to your treatment, I suggest that you examine your patient's feet in the manner explained in the previous paragraphs under diagnosis.

Burning usually occurs at the ball of the foot and is due to the stagnation of venous blood and lymph arising from a disturbance of the bones in the posterior transverse arch. Usually you will find quite a thickening of the soft tissues under the ball of the foot and just behind the toes, which indicates a disturbance of structure farther back in the foot. This symptom is usually relieved promptly through your treatment.

Corns usually come on the fourth and fifth toes with an occasional one on the top of the other toes, but in the great majority of cases the point is at the articulation of the first and second phalanges of the fifth and fourth toes. Corns prove the lateral and upward rotation of the fifth and fourth metatarsal bones which is the result of forcing the inner border of the cuboid bone down as the heel bone comes against it. This lateral and upward rotation forces the toes against the twill lining of the shoe and in walking there is friction over these joints resulting in a corn. The cause of corns any other place on the foot may be traced by following back along the true mechanical line.

Soft corns usually come between the fifth and fourth toes and usually on the side of the fifth toe at a point which is in the middle of the shaft of the first phalanx. If you will examine the skeleton of the foot you will find that the proximal head of the first phalanx of the fourth toe is almost in the center of the shaft of the first phalanx of the fifth toe. As the inner border of the cuboid bone is rotated down and the fifth and fourth metatarsal bones at the toes are rotated laterally and upward you will find this head of the fourth toe phalanx jabbing into the side of the fifth toe, and Nature signals with the formation of a soft corn to advise you that the cuboid bone has been forced out of place and behind it the os calsis.

Calluses may come most anywhere on the foot. They are signals that there is a friction where there shouldn't be. Favorite points for formation of calluses are under the articulating distal heads of the metatarsal bones. In extension of the toes and forcing out of the anterior transverse arch you can readily see which toe is forced down and if there is a callus formed over any one of the heads of the metatarsal bones, follow down the shaft of this metatarsal bone to its articulation with one of the bones of the posterior transverse arch and you will find a thickening of the ligaments between the articulation, proving that the bones are in lesion. It is an absolute impossibility to have a callus on the foot unless there is a disturbance of structure. By following back from the callus it will carry you through the instep to the os calsis.

Bunions come as the result of the dropping of the internal cuneiform bone with its articulation with the middle cuneiform bone and a mesial and upward rotation of the under border of the first metatarsal bone. As the first metatarsal bone rotates mesially and upward, there is a separation between it and the second metatarsal bone, with a greater separation at the anterior transverse arch. Also, as the first metatarsal bone rotates mesially and upward, the place where we step upon the distal head of the first metatarsal bone is changed

and this forces the sesamoid bones toward the opening between the first and second metatarsal bones. Due to the shape of shoes which begin at the articulation of the first metatarsal and the great toe bones to turn in toward the center of the foot, we have the forcing of the two phalanges of the great toe out of their proper position with the first metatarsal bone and they are turned inward toward the center of the foot, giving us the horrible looking condition we call bunion.

Dr. Herbert A. Robinson, the originator of the Robinson Operation for Bunions, of Kenosha, Wis., has kindly contributed an article in this number with reference to bunions and has some very excellent x-ray pictures in connection with his article, and from our own personal experience we can vouch for anything he has said in this article. This is the only operation that the writer recommends for bunions, and he believes it is the only operation which has been based upon a true conception of the anatomy and physiology of the feet.

Fallen, or *broken arche,* is a name commonly used by the laity. The more we study foot conditions, the more we realize that we do not have any of the other symptoms without a falling of one or more of the arches. There is only one arch, and that is a perfect arch, and the instant that it has fallen one-thousandth or one-quarter of an inch, it is a fallen arch, and it is an absolute impossibility to have any of the symptoms in the feet without the falling of one or more of the arches, except where this condition is due to lesions in the spinal column or pelvis. Since corns and calluses, aches and pains go hand in hand with fallen arches, the one will be relieved as the other is through the proper treatment.

The generally relaxed foot is due to a disturbance of the nerve mechanism to the ligaments and muscles. This condition is most prevalent in children. We never treat children's feet without also treating the sacro-iliac and lumbar regions and looking after any other conditions of the spinal column which will contribute to the relaxation of the muscles and ligaments in the feet. Ligaments particularly, contribute to a relaxed or wobbly condition in the feet. With relaxation of the foot ligaments and a disturbed nerve mechanism it is easy for one or more of the bones in the foot to be misplaced; these must be treated accordingly, although you will usually find practically no other symptoms in the foot.

Rigid feet, although not common, may give some distress. In this condition ligaments are thickened to a great degree, and there may be almost a total lack of motion between any of the bones in the foot. Rigid feet usually are the result of an accident which has produced quite a bad inflammation in and among the ligaments. Nature in her effort to bear the weight of the individual thickens these ligaments until there is almost an ankylosis between the various bones.

Hammer toe comes as the result of several different conditions, but mainly the disturbance of the cuboid bone and the other bones of the posterior transverse arch. This is a condition where the ligaments and tendons of the toes are contracted and the articulation between the first and second phalanges stick up prominently against the top of the shoe. You will find, then, a contracture of the tendons of the muscles which are operating these toes.

A short stocking has a great deal to do with the formation of hammer toe in that the stocking will permit the foot to stretch out straight when stepping but the minute the foot is lifted, the stocking is strong enough to bring the toes back. We are of the opinion that short shoes are never worn, because if they were too short the pressure against the toe nails and toes would be so great that the individual would be able to step but very little. However, wearing of short stockings is very prevalent.

Hammer toes cause a great deal of discomfort, due to the friction between the top of the toe and the top of the shoe, and when the tip of the toe is forced directly down against the sole of the shoe. We are sure you will agree that when the patient tells you the symptoms they have with a hammer toe jamming down into the sole of the shoe, you will be willing to wager that no one ever wore a short shoe.

Morton's Toe is a condition in which we have a pain at the junction of the first phalanx of the fourth toe with the fourth metatarsal bone. It is usually relieved by removing the shoe, which would give us an indication of an impediment to some of the tissues between the toes. To diagnose this condition follow back along the shaft of the fourth metatarsal bone to its articulation with the cuboid and note whether you have a lesion between the proximal head of the fourth metatarsal bone and the cuboid, also, whether the cuboid is in lesion with the os calsis. In Morton's toe never fail to make a careful examination of the lower lumbar region and the sacro-iliac, because the interossei muscles receive their nerve supply from this region, particularly the plantar portion which receive their nerve supply from the third and fourth lumbar segments. The plantar portion of the interossei muscles are abductors to the metatarsal bones, and in many cases you will find the entire cause of Morton's toe to be a lesion in the lumbar region.

Heel pains are usually located at the attachment of the three muscles in the superficial layer of the plantar surface of the foot. These muscles are the flexor brevis digitorum, the abductor digiti quinti, and the abductor hallucis. This is also the origin of the quadratus plantae. These muscles extend forward and have to do with the action of the toes. They are arched underneath the instep and held that way due to the formation of the plantar fascia. If for any reason there is a dropping of the posterior transverse arch, the under sharp point of the external cuneiform bone comes down into an immediate contact with the sheath of the quadratus plantae muscles, and every time the individual steps they are jamming this bone into the top of the muscles. In the great majority of cases the pain will be referred to the heel. Also, with the under portion of the os calsis rotated laterally there

is a strain on the attachment of these muscles and we can have our pain referred in the heel from this direct cause.

There is one point of differential diagnosis which must be made and that is with a spur. As it so happens, the inner tubercle, or the under surface of the os calsis in its formation forward makes a little hook just below the attachment of the muscles which we mentioned before and this little hook can grow enough to be quite a spur and can cause trouble. Therefore, look carefully for the presence of a spur, and if necessary make use of an x-ray picture to prove whether the spur is large enough to cause trouble or not. We have had many cases of this kind where after x-raying and even operating on to remove the spur, the pain still persisted until adjustments of the bones out of position were made in the posterior transverse arch. These adjustments removed the symptoms.

The effects from injuries, particularly fractures, leave a rigid condition of the foot, but quite a bit different from the explanation of the rigid feet given several paragraphs back. Naturally in healing of fractured bone a callus forms, which causes a separation of the part of the bone which has been fractured, and this, then, gives an abnormal condition which must be dealt with and kept in mind. Also, due to the injury at the time of the fracture, there has been a more or less severe inflammation created among the ligaments and this is responsible for ligamentous thickening adjacent to the fractured bone. If we can have these patients within a week or two after the cast has been removed, then our manipulative method of gradually getting in deeper and deeper, and our method of adjusting the bones will restore perfect motion between all the bones involved, and will also reduce the callus. If the fracture has been allowed to remain over a period of months or years, it will take just that much longer to produce results. We have had some satisfactory results with fractured bones, the function being fully restored to the foot.

Cramps in the feet are brought about by stagnation of the toxic venous blood in the muscles. This is Nature's method of producing a quick contraction of the muscles to squeeze out the toxic venous blood and allow new arterial blood to come in. The condition of cramps in the feet can be in association with disturbed bones of the feet, or entirely independent of them. After a careful examination of all of the bones of the foot as we have outlined before, you will know whether you have any bones out of position or not, and if so, these bones must be fixed in order that we may have a perfect circulation in and out of the foot. Then a change of diet of the patient will relieve the formation of the toxic properties from the colon or elsewhere and the cramps will disappear. The ordinary condition of cramps must not be confused with a sensation similar to it which some patients will receive as you begin to restore their feet to normal and have them use muscles which they have not used for a year or more, due to the wearing of arch supports, arch support shoes and other rigid contraptions.

Flat-foot (pes planus) is not a very common condition as compared to all the signs and symptoms you will have due to a change in the transverse arches. Flat-foot is divided into first, second and third degrees. The key to the diagnosis of flat-foot will be tenderness between the navicular and the talus (the scaphoid and astragalus). The presence of flat-foot can also be proved by the usual pedagraphic imprints of the feet. You will not have much trouble in recognizing the condition. If there is no tension between the scaphoid and astragalus, then you will know that you do not have a flat foot but a normally low instepped foot. There are many races, such as the colored, who have a low instep, and this is natural for them.

In children and young people up to the age of fifteen or sixteen years it is well to note that flat-foot conditions are accompanied by a general relaxation of all the tissues in the foot. Therefore, with these patients we always treat the lower part of the spine in order to correct any lesions which are affecting the sciatic nerve and bringing about this general relaxation.

An inversion of the ankle, or what is commonly called a dropped ankle, with some eversion of the foot, although not a common condition is quite a distressing one to the patient because of its appearance. In this type of condition there is a rotation of the talus or astragalus under the two bones of the leg, the tibia and fibula. In other words, there is an entire inversion of the foot at the ankle and you may find no other bone of the foot out of position because the foot having moved as an entire unit gives no further disturbance in the bones of the transverse or longitudinal arches. At times there is a further rotation of the navicular on the talus and lesions of the cuboid and external and internal cuneiform.

Another condition we have to deal with is the *raised proximal end of the first metatarsal bone* with its articulation at the internal cuneiform. This you will see as a small lump about the size of a pea sticking up half way between the great toe and the ankle itself. There is pain at the joint and usually with every step the individual takes there will be an increase of the soreness or pain. It happens that this is the same place that the strap of a one-strap slipper crosses the foot. We believe that most such conditions come as a result of stubbing the toe against an obstacle or some other accident which lifts the proximal end of the first metatarsal bone above the internal cuneiform.

Occasionally we have a depressed proximal end of the first metatarsal bone, and in this way we have a depression about half way between the great toe and the ankle.

In both of the conditions just described you will have to differentiate between an exostosis of the proximal head of the first metatarsal bone or on the anterior border of the internal cuneiform bone.

Ingrowing toe-nails are not in the full sense of

the word ingrowing. In fact, they have been misnamed because it is not the toe-nail that grows into the fleshy part of the toe but it is the fleshy part of the toe which is pushed up over the nail. We attribute ingrowing toe-nails to too narrow shoes or stockings which jam the toes together and force the soft tissues up over the nail. The tendency of the shoe world today is to fit a shoe that is too long and too narrow and by being too narrow we have just this condition as a result of that wrong fitting.

Adventitious bursae (commonly called tailor's bursae) are the swellings just in front of the external malleolus and most unsightly to milady. It is presumed that these bursae come as a result of friction. Note that the ordinary oxford comes across the foot and to the front at this area and therefore it would be very easily possible for this type of footwear to produce an undue friction at this part of the joint and bring about the formation of a bursa. Another thing we attribute these bursae to is the turning or spraining of the ankle and, as the result of the tearing of some of the fibres of the capsular ligament of the ankle, the synovial fluid is allowed to collect in the tissues and later on becomes organized. Usually these bursae are not sore although at times they do become so from friction.

Retrocalcaneal bursae are those which come just above the attachment of the Achilles' tendon into the calcaneum. Usually these bursae come as the result of the friction of the back of the shoe against the foot. If you will note, some shoes are curved out deeply for the protrusion of the heel and the upper edge of the shoe just above the counter jabs into the tissue over the Achilles' tendon. As a result of this friction Nature in her protective power forms a bursa at this point. Often you feel a severe pain here. It is not so much due to the bursa as to the thing which permitted the bursa to form.

Thickening of the ankle and the lower third of the leg is usually due to the foot being out of balance with the leg at the ankle. As you work with the foot these conditions will disappear.

Pains in the legs are also due, in a great measure, to foot conditions. Many times you will find the muscles thickened or converted to a fibrous nature due to the effort of the patient to hold the leg rigid to give relief from pain in the foot. The differential diagnosis will be whether the condition is coming from the feet or from lesions in the lower lumbar region.

Naturally, as the foot is thrown out of balance with the leg at the ankle, and the leg and thigh are thrown out of balance at the knee, and the thigh or femur is thrown out of balance at the innominate, so there is a disturbance of the balance of the spinal column from the hips to the head, and backaches anywhere from the bottom of the back to the neck, headaches, insomnia, indigestion and other ills can be the result of conditions in the feet, or spinal conditions can be aggravated by conditions of the feet.

We recall a rather heavy woman whose feet were turned in markedly, and who complained she had not slept through a night for twelve or more years. We suggested it might be possible that her feet were causing some of the trouble through disturbance of balance, but we also reasoned that there must be some trouble in the upper dorsal region. We treated her feet and the night following the first treatment she slept through the night and continued to sleep well. Needless to say, her feet responded quickly and today she enjoys foot comfort.

OSTEOPATHIC TREATMENT OF FOOT CONDITIONS

The object of treating foot conditions is to restore full physiological function. We expect to accomplish this by removing any impediments to the nerve, blood and lymph supply and drainage by removing thickening in the ligaments, restoring proper motion between the bones and by adjusting the bones themselves.

With this object in view we divide the treatment into two divisions: (a) manipulative, and (b) adjustive.

MANIPULATIVE TREATMENT

Manipulative treatment of the foot is of first importance because if not done, and done properly, the adjustive treatment is just that much more difficult and slower in its response. We have found the following procedure to be efficacious in the thousands of cases we have treated.

We keep the same position that we did in diagnosis, the patient sitting on an ordinary straight chair and the doctor on a lowered McManus stool. We use a stool for the feet which is the same height as the seat of the chair upon which the patient is seated. We sit upon the left hand side of the patient and at right angles, treating both feet in the same position. A left-handed individual can reverse the position, sitting at the right of the patient.

For convenience, we will describe the treatment of the left foot. Have the left foot placed over your right knee, with the thigh and leg of the patient out straight and in a relaxed condition.

Now put your right hand with the thumb and index finger spread out over the ankle, and with your left elbow against your left thigh, and the palm of your left hand under the ball of the foot push the foot up toward the patient, using your thigh to push with—not your arm. To increase the pushing pressure, let your chest rest on the back of your left hand and thereby your thigh and chest will be pushing against the foot of the patient and through your hand. Do this four or five times, increasing the pressure each time.

Next, with the right hand over the top of the foot and the left hand under the foot, first twist the foot sharply with the lateral border down or away from the body of the patient, and next, bring the lateral border up toward the patient. Do this several times.

Then with the thumb of your left hand under the instep of the foot and with your left elbow against your thigh, put your right hand over the tops of the toes and push the foot down over the thumb of your left hand. Move the thumb of the left hand from the internal cuneiform bone to the middle cuneiform, then the external cuneiform, then

the cuboid, then the scaphoid, and back and forth, across from the mesial to the lateral border, perhaps five or six times, thoroughly bending the foot down over your thumb.

Place your right hand over the mesial border of the foot, so that the index and second finger of the right hand go under and around the scaphoid bone, and the thumb of your right hand comes across the top of the foot of the patient just in front of the ankle. Then, with your left hand in practically the same position, with the thumb on the top of the foot and your fingers underneath, holding the internal cuneiform bone, twist the foot in and out, up and down, getting a thorough motion between the scaphoid bone and the internal cuneiform. Then move both hands up toward the great toe so that your right hand will grasp the internal cuneiform bone and your left hand will grasp the first metatarsal, and repeat the twisting up and down and in and out. It is at the junction of the internal cuneiform bone and the first metatarsal bone that we have a wedge-shaped thickening, with the larger part of the wedge in toward the second metatarsal bone and the point or tip of the wedge toward the mesial border of the foot. This is formed in a bunion and causes the spreading of the first metatarsal away from the second metatarsal bone at the distal end. The thoroughness with which you break up this thickening and wedge-shaped formation is one of the things which will help you greatly in reducing a bunion or preparing a patient for the Robinson operation.

Keeping in mind that the first metatarsal bone has rotated with its under border mesially, grasp the shaft of the first metatarsal bone with your right hand, the thumb on top and the fingers underneath, and then push your fingers in toward the center of the sole of the foot and hold firmly while you grasp the great toe with the thumb and finger of your left hand and work the great toe joint at the junction of the first metatarsal with the first phalanx up and down, in and out, and in a circular motion, breaking up all of the thickenings that are at this joint. Then, with the fingers of both hands along the shaft of the first metatarsal bone, and your thumb along the inner border of the first phalanx of the great toe, hold firmly with your fingers and push against the great toe joint. The object of this is to stretch the internal lateral ligaments of the first metatarsal bone and first phalanx of the great toe, which is deeply contracted in a bunion formation.

Hold the head of the first metatarsal bone at its junction with the great toe firmly in your right hand, thumbs on top and fingers around underneath. Then grasp the rest of the foot so that the thumb of your left hand comes on top of the distal head of the second metatarsal bone and your fingers underneath, and then work up and down, up and down. Then bring the first metatarsal bone where the sesamoid bones have been pushed in toward the lateral border of the first metatarsal bone, in under the second metatarsal, and try to force the sesamoid bones into their place under the first metatarsal head.

Then hold the second metatarsal bone as you did the first, and with your left hand move the third metatarsal bone up and down on the second metatarsal. Then the third, fourth and fifth.

Put the thumb of your right hand over the top of the fourth and fifth toes, and with the first and second fingers around over the top of the fourth and fifth toes to their junction with the fourth and fifth metatarsal bones. At the same time put the thumb of your left hand under the cuboid bone and your fingers on top at the junction with the fourth and fifth metatarsal, keeping in mind that these two bones have rotated with their under borders laterally; turn them mesially and work them up and down so that you will break up all the thickenings and adhesions at the junction between the metatarsal and cuboid bones. It is due to a lesion of the fourth and fifth metatarsals that we have the formation of the soft corn on the shaft of the first phalanx of the fifth toe. Therefore, look carefully for this extra lesion of the fourth metatarsal with the cuboid and correct it as we have just described.

HAMMER TOE

Where the toes are contracted, as they are in the condition known as hammer toe, hold the thumb of your right hand over the top of the first phalanx and your fingers around to the under surface of the first phalanx of either or any of these toes, and with the thumb and fingers of your left hand work loose the different phalanges of the toe or toes that are in trouble. Do not fail to move these phalanges from side to side by grasping one phalanx with your right hand and the other with the left and move them back and forth and from side to side. Stretch most thoroughly the contracted tendons that are drawing the toes into this hammer shape. Also, take both thumbs on top of the foot and with the fingers around underneath the lateral and mesial borders, work your thumbs around thoroughly just below the attachment of the toes with the body of the foot, and then push up right over the toes, stretching them down.

THICKENING UNDER BALL OF FOOT

Where there is a thickening of the soft tissues under the ball of the foot, grasp firmly between the thumb and fingers of your left hand and work thoroughly in order to break down the thickenings that are in this tissue. Then grasp the heel of the foot in the palm of your left hand in such a position that your left thumb is parallel with the shaft of the tibia and just behind it at the internal malleolus. Then with the right hand over the top of the ankle pull hard with your left hand, turning the heel bone, first laterally, then mesially and back again. Do this a number of times to work it loose from the astragalus, and also to work the astragalus loose at its articulation with the tibia and fibula.

BURSAE

If there are any bursae at the ankle joint, with your two thumbs, or with your two index fingers, work over these bursae thoroughly and deeply and

then, holding them with one hand or thumb, turn the foot outward and inward so that you have a stretch upon them. Then put your fingers behind the bursa and bring the foot over against it. This will help to break down the thickenings that are causing the trouble. This would also apply to a retrocalcaneal bursa.

For the rotations of the fibula, grasp the foot in your left hand with the thumb on top and fingers underneath. Then with the thumb of the right hand over the external malleolus where the fibula joins the foot at the ankle, press down firmly as you push the foot away from you. Then bring the thumb of your right hand under the external malleolus and pull the foot toward you. Do this several times. Then put the thumb of your right hand up at the upper head of the fibula, just beneath the knee joint and, while pushing down, push the foot and leg away from you, and then reverse, with your thumb under the head of the fibula, pulling the foot and leg toward you, thoroughly relaxing all of these ligaments. In working out the thickenings it is possible to restore the proper tone in these ligaments.

FRACTURE AND INJURY EFFECTS

For the effects of fractures and injuries, you may find that the thickening in the ligaments demands more severe treatment. A more powerful treatment can be given to the foot by the doctor kneeling on one knee in front of the patient, placing the patient's left foot against his right upper chest where the outward sloping of the chest will conform with the turn of the foot's surface. Then, holding the foot firmly with the right hand on top of it, and with the thumb of the left hand over the junction of the scaphoid and astragalus, and with your fingers underneath the heel rotate your body first in and around, up toward the patient in a circle, holding it firmly enough so that you can feel the motion between the scaphoid and astragalus. Move the thumb of your left hand to the next bone and turn it and follow this until you have moved every bone in the foot, just as hard as you can push and the patient can stand. This will take some persistent hard work, but as the result of it you will have a great deal of satisfaction. People with rigid or injured feet, who wear a properly fitted Nature-Tread Foot Appliance, can get the same effect in walking, as every step they take tends to do just what you are trying to do with your hands.

DROPPED ANKLE

The dropped ankle is treated, practically speaking, in the same way we have just described for rigid feet or effects from injuries. Particular attention is paid to holding the thumb of the left hand against the astragalus as you work it thoroughly under the fibula and tibia. With this type of condition, we also use the Nature-Tread Foot Appliance as it will right the heel bone around and hold it in position. Therefore, every time the individual steps he is working out the thickening in the ligaments between the astragalus and the fibula and tibia.

HUMP FOOT

The cavus, or hump foot, gives you the problem of the removal of the thickenings in the ligaments and tendons in the under surface of the foot which have brought the toes and heels nearer together. Persistent and careful manipulation will work out these thickenings, so that normal function between the bones will be restored.

The raised proximal head of the first metatarsal bone is very easily reduced by holding the internal cuneiform bone, as we outlined before, with your right hand, thumb on top, and the index finger around underneath the bone. Then with the thumb of your left hand on top of the proximal head of the first metatarsal and your fingers underneath, rotate the first metatarsal in and out, up and down, until by working out these thickenings the bones are put back into their proper position. The depressed head of the first metatarsal would call for the reverse in treatment.

CRAMPS

The treatment for cramps will follow this general outline and you will have some very excellent results.

RELAXED FEET

For generally relaxed feet the treatment we have outlined, plus your adjustment of the lesioned vertebrae in the small of the back and at the sacro-iliac joint, will in time clear this condition.

MORTON'S TOE

Morton's toe, as we said before, usually carries with it a lesion at the lower lumbar region, and along with the manipulative treatment we have just outlined, be sure to add your spinal adjustment. Then as you adjust any lesions in the bones of the feet you should have a complete recovery.

ACHES AND BURNING PAINS

Aches, pains and burnings will disappear promptly after this type of manipulative treatment and the adjustment of any lesioned bones.

CORNS AND CALLUSES

Corns and calluses need not be touched directly, but may be covered by the usual adhesive plaster or the compressed cotton plaster in order to remove any irritation caused by shoes for their immediate relief. As you correct the cause—disturbed structure—according to the manipulative and adjustive treatment, they will disappear.

FOOT STRAPPING

At times the patient may have quite a bit of pain and in order to give relief we strap the feet with one piece of adhesive. We use a two-inch width of adhesive tape, and beginning on the top of the foot, go toward the lateral border, placing the tape so that its forward edge is parallel to a line drawn from the great to the little toe. Then swing around over the lateral edge of the foot, across underneath the lower half of the metatarsal bones toward the center of the instep on the mesial border, and as you do this pull tightly and rotate the foot slightly. As you pass around under the instep, bring the foot up toward the body, then carry the tape across the ankle and up around

underneath the lower part of the leg. This is all you need do with reference to strapping. Sometimes it is very efficacious when the individual has pains in the heel; and in such cases you may have to renew the tape and keep it in use for several months or until the condition is cleared.

BUNIONS

Bunions have been so ably discussed in the article by Dr. Herbert A. Robinson, that we would have you read it again for their cause and formation. With this knowledge thoroughly in mind, then with your manipulative treatment you have two objects in view: either the possible reduction of the bunion, or the preparation of the patient for an operation. The preparation of the patient will aid the operation greatly, and your patient after the operation will hardly know that anything was ever done to the feet. By working diligently and thoroughly you will be surprised at the wonderful results you will receive from your manipulative and adjustive treatment in bunion cases.

ADJUSTIVE TREATMENT

We use the Post System for Feet. With the applicator placed on the left hand, so that the adjusting portion is over the thenae process of the left hand, we are ready for our adjustive treatment.

Extend the toes as you did for your diagnosis, with your right hand over them and with the thumb of your left hand beginning at the great toe joint slip down along the shaft of the first metatarsal to the junction with the internal cuneiform bone. Hold this spot and place the second finger of your right hand next to the left thumb. This way the end of the second finger covers the main body of the internal cuneiform bone. Note carefully which way this bone is in lesion, whether down and out, straight down or down and in, with reference to the center of the foot. Then place the applicator against the bone in the direction you wish to force it and the fingers up over the top of the foot, coming around the mesial border. With your right hand apply your stroke with a firm springing blow and immediately rub the top of the foot to remove the sting. Then follow with the fingers of both hands under the plantar surface of the foot to work out any stagnant drainage in these soft tissues of the sole of the foot.

Again extend the toes with the right hand, and with the thumb of your left hand, beginning at the little toe joint, come over to the distal head of the third metatarsal, then turn your hand around so the thumb is parallel with the shaft of the third metatarsal; and move down two and a half inches to the junction of the external cuneiform bone; hold it, and then with your right hand, coming around the mesial border of the foot, place the tip of your second finger against your left thumb, then, removing the thumb, put your applicator here. Now, with the fingers of the left hand around the mesial border of the foot, hold the applicator firmly in place. Then cup your right hand and apply your applicating stroke to the top of the foot, rubbing it quickly to remove the sting, then with the fingers massage the under surface of the foot.

Then with the right thumb slip down along the lateral border of the foot to the tubercle on the proximal head of the fifth metatarsal bone, and at this notch slip your thumb around under the foot as far as the first phalanx of your thumb, then with the thumb of your left hand, examine thoroughly for the lateral projection of the cuboid bone. Place your applicator against this and with your right hand make your applicating stroke to the top of the foot just so that it will miss the cuboid bone. Rub it quickly and then massage the under surface of the foot.

In adjusting the cuboid bone you are also adjusting the os calsis, or calcaneum, and the scaphoid, or navicular. The mesial and posterior projection of the cuboid bone is under both of the other two bones and in your adjustment of it you have pushed the other two up into their proper position.

In flat-foot you will remember we have the rotation of the scaphoid, or navicular, and you adjust that by getting on one knee in front of your patient, placing the applicator against the tubercle of the navicular bone and the fingers over the top of the foot, just in front of the ankle. Then apply your applicating stroke so that your force will come against the lateral edge of the cuboid bone and direct it right straight across the foot. This has the action of the cogs in cog wheels and lift the bone into position.

Where the astragalus is out of position in a dropped ankle you may apply the same sort of an adjustment stroke to it as you do for the navicular.

The same type of adjustive treatment is used for the cavus or hump foot.

EXERCISES

To aid us in our work we use only three exercises for the feet. First, we have the patient sit upon the edge of a bed or chair with stockings off and pick up an empty thread spool with his toes, gripping it harder and harder as ability to pick it up increases. Second, the patient lies on his back in bed and brings both feet up, at the same time contracting the muscles of the thigh and calf. Relax and repeat twenty or twenty-five times. Third, in the same position, the patient pushes his feet away from himself and contracts the muscles of the calves and thighs, twenty or twenty-five times.

For the flat-footed individual we prescribe standing with full weight on a roller (a rolling pin will do) and roll back and forth from toe to heel. This aids in the more rapid reduction of the thickenings in the ligaments, tendons and muscles, and aids in the restoration of the tone.

We do not recommend any exercise like rising upon the toes, for this stretches the already strained ligaments of the under part of the foot.

A few specific exercises stand a better chance of being faithfully performed.

SHOES

We recommend only the rounded toe, straight last flexible instep shoes. These allow the foot an

opportunity to work as Nature intended it to work. We like a shoe which is fitted just as short as the foot can take, which is usually one size shorter than the measuring stick measures, but wide enough to give perfect comfort across the anterior transverse arch as the individual stands in it.

Shoes for the growing child must be carefully selected with reference to width and length. Width first always, as the feet normally do not elongate more than one-eighth of an inch when we step upon them, but they do spread sidewise to a greater degree. It is the sidewise spreading and pulling together that pumps the blood and lymph in and out of the tissues of the feet and keeps them normal. Do not at any age interfere with the most important physiological function of the feet.

The round toe, low heel, flexible instep shoes like the Cantilever, Ground Gripper, Hurley, Osteotarsal, Walk-Over, Regal, and others are the best for the feet. Insist that your patients wear these shoes and that they receive from the shoe clerk the shoe and the fitting you recommend. Many clerks will try to persuade the patient that they should have something else, but if you forewarn them the clerk will be forestalled. A properly fitted shoe will aid the restoration process greatly.

Properly fitted stockings and good care will continue the good work.

In closing, we would again repeat that osteopathy is the only method of treatment which can go to either end of the line for the relief and cure of any and all foot conditions.

Dr. Still said "Find it, fix it, and leave it alone." Nature will do the rest.

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Foot Technic

GEORGE C. TAPLIN, D.O.
Boston

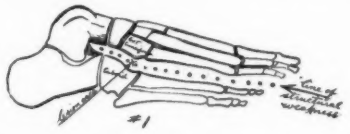
When asked to contribute this paper I thought to make it more comprehensive, but collected data showed that a whole chapter could well be devoted to a sprained ankle or illustrated strapping. Time and space forbid. Therefore we will hit a few high spots.

The foot is not a unit but is divided into two parts both in structure and function. The division is longitudinal and extends from the os calsis, or heel bone, through to the toes, passing between the external cuneiform and the cuboid, and between the third and fourth metatarsal bones. See Fig. 1.

The outer division is the standpatter. Its outer margin approximates the ground throughout its full length. It sustains weight and helps maintain balance in standing, but in walking and running its value is subordinate. The inner division is the go-getter. It is here exists the elasticity, the spring and the power for active propulsion.

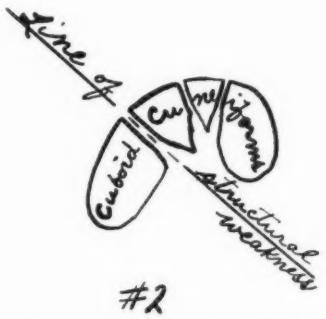
On account of this long line of structural division and in connection with this differentiation of function, a special vulnerability is inherently established which is most important at that contact where a lesion would do the most harm, namely, between the external cuneiform and the cuboid. See Figs. 1 and 2.

A transverse section through the cuboid and cuneiforms shows the only bone structure formation of the foot that from the standpoint of engineering could be called an arch. The inner pillar (1st cuneiform) is, however, held in flexible suspension by muscle strength, chiefly the posterior and anterior tibial, and by ligaments. The outer pillar (the cuboid) is wedged low between the os calsis and



the 4th and 5th metatarsals and in suspension upon the heavy cord of the peroneous longus muscle.

Here is represented the true transverse arch with architectural keystones. Standing approximately in the center of the so-called longitudinal



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arch it provides a truss and stanchion for that arch without which its structure cannot be sustained.

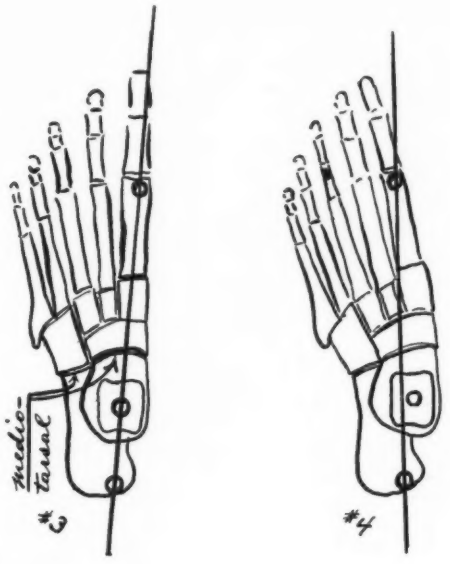
It is a common error to think of the highest part under the inner border of the foot as the apex of the longitudinal arch, but when we observe the skeleton it is evident that a longitudinal line drawn through the highest part of the dome passes through the keystone structure of the transverse arch between the apices of the middle and external cuneiform bones; that internal to this line lie the large part of the scaphoid, the internal cuneiform, major portion of the middle cuneiform and the 1st and 2nd metatarsals.

The integrity of the true transverse arch is, therefore, a matter of great importance to the whole foot. Its weak spot, as previously explained, is between the cuboid and the external cuneiform.

To avoid misunderstanding and to correct another rather common error, the term transverse arch must not be applied to or confused with the so-called anterior metatarsal arch; also, to stimulate more accuracy of attention to the anterior metatarsal region, allow me to say that there is no arch there—no arch structure whatever. The normal ground pressure is a little less under the middle than at the sides, due in a small degree to the placement of the anterior metatarsal ligaments and the transversus pedis muscles, but more particularly to the power supplied to the great toe on the inside and the balancing pressure reaching the ground at the distal end of the 5th metatarsal on the outside. When too much pressure develops under the middle, pro-

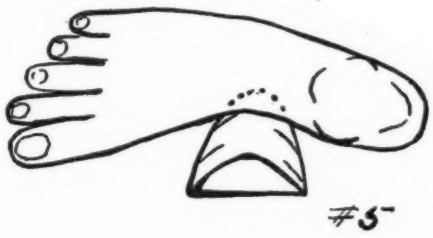
ducing calluses and tenderness, the cause is invariably located further back, usually a buckling between the cuboid and external cuneiform. See Figs. 1 and 2.

Bear in mind that both the 4th and 5th metatarsals join the cuboid. The 4th is much higher



up than the 5th. Lowering the internal border of the cuboid throws the 4th metatarsal into the ground, so to speak, anteriorly. This same condition holds true with external cuneiform and 3rd metatarsal.

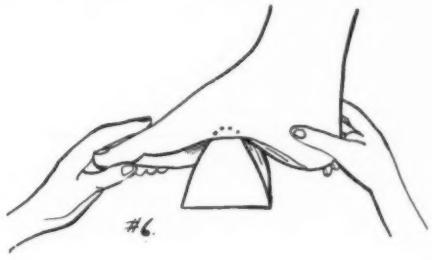
The ankle joint has flexion and extension only; no lateral or rotary motion worth mentioning. Its range of flexion and extension is about 75 degrees. From a right angle with the tibia it will depress about twice as far as it will rise.



The capacity of inversion and eversion is chiefly in the subastragaloid joint between astragalus and os calsis. The mediotarsal joint also has capacity of inversion and eversion, but its special functions are adduction and abduction. The mediotarsal consists of two separate and distinct joints, the astragaloscaphoid and the calcaneocuboid, which line up across the foot so that their functions combine. All the metatarsophalangeal joints flex and extend with great range and all other joints flex, extend and glide to a limited degree.

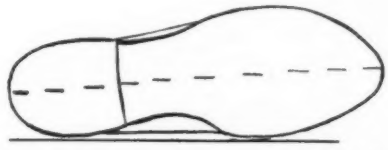
The weight of the body superimposed upon the astragalus is so far internal in relation to the ground contacts of the foot that it literally overrides the internal base line. In this position we have a wonderful flexibility to which strength is added by the position of the weight being rather near to the rear end of the line, so that, with arch formation up in position, the amount of muscular effort necessary to sustain the mechanics of the situation is quite moderate; in fact well within the bounds of comfort and great endurance. See Fig. 3.

But, if we prevert the arch by abducting at the mediotarsal joints or everting the subastragaloid



or both, the balance of power is greatly upset because the weight is then projected outside the base line so that the arch falls abnormally upon the muscles supporting the inner border. Continued abduction strains the external cuneiform backward in its contact with the cuboid until the restraining ridge and groove between these bones produces

Correct principle. Curved last, straight inside line.



Incorrect principle. Straight last, curved inside line.

gradual separation. Then one or the other, or both, buckle downward. The superstructure of the transverse arch being thus loosed from its stanchion is still further thrown inward onto the muscles that support the inner pillar. See Fig. 4.

When the center of gravity of a structure falls outside its base, that structure falls right then and there unless effective outside support is available. Therefore the arch, normally adequate, leans heavily upon the muscles, a handicap too great for efficient functioning.

When the foot is abducted it is weakened. The internal border is lengthened and lowered, the superimposed weight is projected outside the base line, the cuboid-cuneiform joint is often subluxated, the muscle power is wasted.

When the foot is adducted it is strengthened. The inner border is shortened. The arch is raised. The superimposed weight is carried within the base

line. Muscle power is conserved. The inversion that naturally accompanies, also brings the striking point of the os calsis in better relation to the body weight and throws a large portion of the weight on to the outer border of the foot.

A large percentage of foot cases fall within the preceding anatomical causative outline and may be cured or largely benefited by developing adduction, inversion and flexion. Specific adjustments are most frequent in reference to the line of structural weakness between the cuboid and external cuneiform bones.

THEREFORE

Secure flexion and extension of the ankle throughout a range of 75 degrees, two-thirds of which should be downward and one-third upward.

Develop adduction of the foot and abduction of the great toe by internal lateral flexion around a fulcrum placed at the internal juncture of the mediotarsal or against the scaphoid bone. See Fig. 5.

Develop inversion by turning the plantar surface inward until the anterior portion is in line with the tibia.

Develop flexion-gliding in the dome of the arch by strong flexing over a suitable fulcrum placed in the dome of the arch (slightly external to the internal cuneiform bone). See Fig. 6. If the fulcrum properly fits the dome, flexion mobilizing will crown the arch and encourage normal relations of the whole mid-arch structure, including the cuboid-cuneiform juncture.

To secure normal flexion of the metatarsophalangeal joints it is sometimes necessary to reduce slight adhesions to the extensor tendons by quick, forced flexion over a suitable fulcrum placed under the heads of the metatarsal bones.

The sum total of the preceding general measures applied with reasonable force will usually reduce adhesions binding the cuboid-cuneiform joint, but to make sure, place a small fulcrum under the internal border of the cuboid and flex the foot over it *diagonally inward*. Then place the same fulcrum under the apex of the external cuneiform and flex the foot *vertically*.

It is my custom to make specific reductions first so that subsequent manipulations will have the benefit of greater freedom, but generally good results are obtainable without much knowledge of structure by following the above general suggestions.

Put the foot into a shoe that favors adduction of the foot with abduction of the great toe. (The term abduction as applied to the great toe signifies abduction in relation to the other toes, which is adduction in relation to the median line of the body).

A badly fallen, abducted foot may not at once be benefited by the ideal shoe. It may even be advisable to wear out two or three pairs of intermediate lasts in the process of rebuilding.

If we exempt sprained ankles, probably 90 per cent of foot troubles are gradually developed by faulty shoes and toeing out.

The fact that most shoes are made in total disregard of anatomical requirements cannot well be blamed upon the manufacturers when so few physicians know enough about the human foot to be intelligent listeners, when the purchaser of shoes. Knowing nothing about the foot, the purchaser buys his or her shoes for "looks" and style with a total lapse of judgment and an utter perversion of the sense of beauty.

The perfect last has a straight inside line, a narrow flexible shank, a close heel and room forward for the toes to lie straight from the metatarsals. With this shoe the arches are not misplaced and the superimposed body weight is normally within the base lines of the arch pillars.

Etiology and Cure of Bunion

HERBERT A. ROBINSON, M.D.
Kenosha, Wis.

Having read a paper before the Illinois Association of Osteopathic Physicians and Surgeons my theories are known to many of you without any elaboration, but many probably have not heard or read my talks and having been asked to write a short paper for THE JOURNAL, I shall attempt to show where my theories are superior to the older ones.

No profession so relentlessly pursues the cause of a trouble and its removal as the osteopathic. If we look up the literature on bunion we find many causes given for the deformity, which is nothing more or less than a dislocation of the great toe joint. Every possible style of shoe has been accused in days gone by for this deformity and you will find that each kind of shoe works in a manner diametrically opposed to all other kinds. For instance, we are told by many patients that it was from wearing a short shoe that their big toe was pushed out of joint. Another will say he never wore a short shoe in his life but he thinks he has worn shoes too wide and that they allowed his feet to spread and caused the trouble. Another will say that he used to wear shoes with pointed toes and they pressed his big toes over and gave him this deformity. Many claim high heels are to blame and others will say a narrow shoe is the offender.

Can anyone imagine how a narrow shoe could separate the first and second metatarsal heads sufficiently to cause almost a complete dislocation of the metatarsophalangeal articulation of the great toe? Can you imagine anyone suffering the pain which would be present from a shoe sufficiently short to press back and dislocate the big toe joint, with ligaments surrounding it which are strong enough to hold the weight if hung by them?

If a short shoe were the cause it would be perfectly logical to put on a longer shoe and a narrow one and in that way let the great toe go forward and the metatarsal heads come back together and cure the whole deformity—but experience shows that this cannot be done.

And so on through the category of shoes. We might as well dispense with the shoe theory; for external pressure never caused a bunion. Then it

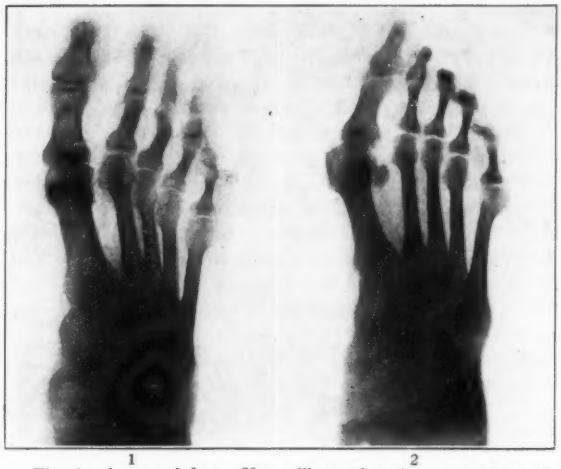


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Fig. 1.—A normal foot. You will see that the sesamoids are in their normal position and the heads of the first and second metatarsal bones are about one-eighth inch apart.

Fig. 2.—A foot of a young lady just as she took off her shoes.

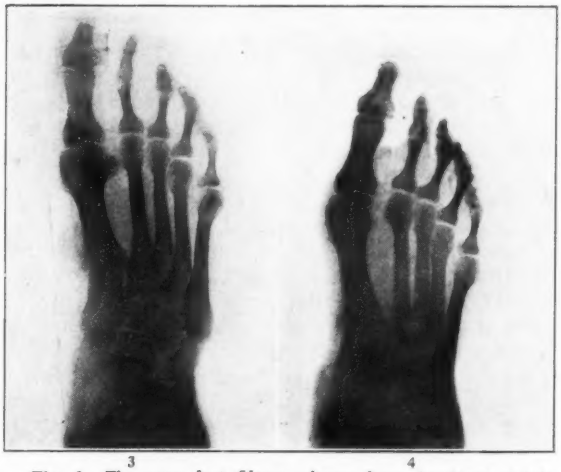

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Fig. 3.—The same foot fifteen minutes later, bandaged tightly. It shows the dislocation almost completely reduced and proves that bunion is not an overgrowth of bone.

Fig. 4.—The same foot as Figs. 2 and 3 two weeks later, minus the sesamoids. The patient is ready to be fitted with tight shoes and go home.

5 6

Fig. 5.—A foot with a well marked intermetatarserum without a sign of bunion.

Fig. 6.—A well developed bunion without a sign of a Dwight bone. I could produce many feet with well developed wedge-shaped bones and not a sign of bunion. I could show others without wedges and well developed bunions which would absolutely prove that the wedge was not necessary to the development of the subject at hand.

must be from internal pressure. Let's look at some of the theories along this line.

Binnie's Surgery, seventh edition, published in 1916, describes a supernumerary bone in the foot called the intermetatarserum of Dwight, situated at the basis of the first and second metatarsal bones, that may be fused with either or both, or may be fused to the internal cuneiform.

In 1910 J. K. Young said he believed Dwight's bone was the cause of some cases of bunion and that its early removal would relieve all symptoms.

In 1920 Dr. J. J. Monahan published an article in the *Medical Times* of New York in which he refused to accept any of the old theories, mine included, except the supernumerary bone aforementioned, which he claims is the direct mechanical cause of bunion. Now I believe I have as good a right to reject as anyone and I do hereby reject any and all the old theories including the supernumerary bone that the author just mentioned says is the direct mechanical cause of every bunion; for I claim there can be but one cause for the dislocation called bunion, and to show my faith in my theories I have removed what I believe to be the cause 548 times. I have never seen an account of where the *Medical Times* author ever removed this supernumerary bone for bunion. He removes the result instead of the cause.

Briefly stated, my theories are that the actions of the sesamoid bones, which are situated under the head of the first metatarsal, are the direct cause of the dislocation of the great toe joint, or bunion. One may have a bunion on top of the foot, on the bottom or on the side of the foot, all depending on the strength of the ligaments in the different positions and the direction in which the sesamoids point and attack, plus an hereditary weakness of these ligaments. Every bunion can be traced. Hence the theory of heredity.

(End of Symposium on Foot Technic.)

Diabetes—Its Diagnosis and Treatment

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ARTICLE X

EXAMINATION OF BLOOD

Remarkable advances have been made in the field of blood chemistry in the last few years. With the introduction of a system of blood analysis by Folin and Wu, Lewis-Benedict and Myers-Bailey, we are now able to make from a comparatively small sample of blood a complete analysis, including sugar, urea, non-protein nitrogen, uric acid, creatin, creatinin, and chlorides. Formerly each of these determinations required as much or more blood than is now used for all of the tests. A 10 c.c. sample of blood will permit a complete chemical analysis, not including a gas analysis.

No attempt will be made in this series to give

a detailed account of all the blood chemical analyses, but merely those tests which are essential to the proper diagnosis and as a check on the progress of the treatment of diabetes.

The true condition of the patient so far as carbohydrate metabolism is concerned may better be seen by an estimation of the amount of blood sugar than by the degree of glycosuria. As a result of the data obtained by following out these microchemical methods, we know that a hyperglycemia may exist without any glycosuria. Again we may find glycosuria without any hyperglycemia. The appearance of sugar in the urine in cases of diabetes mellitus is merely a matter of the threshold point having been passed. The threshold point is that point in which the blood sugar reaches a level above that which the kidney can hold back in the blood and as a result there is pouring out of sugar in the urine. In normal individuals the renal threshold is not a constant factor, but if the blood sugar is not above 0.17 per cent., sugar fails to appear in the urine. When the sugar reaches 0.18 per cent or more, there is a development of glycosuria. In a few instances the renal threshold was much lower, namely, below 0.12 per cent, and these persons may have glycosuria after a normal meal even though the blood sugar curve is within the normal reaction limits.

One of my most outstanding cases of this kind was Mrs. A., who had had diabetes for over two years according to the report of several physicians. These reports were based on the constant findings of sugar in the urine. I was called to treat this woman for diabetes. My examination revealed 7 per cent sugar in the urine while the blood sugar curve after carbohydrate feeding was within the normal reaction limits, and the blood sugar on a twelve-hour fast was 0.12 per cent. Since the normal blood sugar is from 0.08 to 0.12 per cent, this patient was within the normal limit and was not a diabetic but a case with a very low renal threshold.

It has been generally known that there is a high threshold point in nephritis but some investigators call attention to the fact that without any known cause, some nephritics have a high threshold point and others a low point. In diabetes many very interesting variations are discovered.

In some of our mild cases the renal threshold was at a normal level but in a number of the moderately severe cases and in one of the severe cases the threshold was below 0.15 per cent. Many mild cases have a high threshold and many severe cases a lowered threshold, and this lowered threshold may be a factor in the severity as well as nature's way of trying to relieve the condition.

There is great difficulty in estimating what the normal threshold point is, and it is for this reason that blood sugar determinations are so vital. A very interesting case which was treated in our hospital gave a figure considerably higher than that usually considered as the threshold point of renal permeability for sugar. It will be noted from a study of the figures shown in the accompanying chart of the case of Mr. N., aged 58, that this individual, a diabetic for ten years, when put on a diet of 38 gms. of carbohydrate, 55 gms. of protein and 36 grm. of fat daily, easily became sugar free so far as the urine was concerned while his blood sugar remained high. Benedict's test was used in the urine sugar determination. It can thus be seen that a rather high degree of hyperglycemia may exist without any glycosuria. This individual believed that the few days of partial starvation which made the urine sugar free also placed him in a state of normal carbohydrate equilibrium. The result of these blood examinations, however, convinced him of the error of his judgment in this respect.

TABLE VI—CASE OF MR. N.

	Blood		Urine			
Date	Sugar %	Combining power of blood plasma	Sugar %	Acetone	Diacetic acid	Specific gravity
3-1-27	0.396	74	4.2			1.038
3-3-27	0.380		4.2			
3-4-27	0.284		1.2			1 034
3-5-27	0.262		0.5			1.030
3-6-27	0.240		absent			1.026
3-7-27	0.240		absent			1.025

A patient may be truly diabetic and may have kidneys relatively impermeable to sugar up to a very high point. Therefore, if only the urine were examined in such a case the negative findings would not by any means justify us in eliminating the diagnosis of diabetes mellitus. The finding of an abundance of sugar in the urine alone does not give us the most intelligent idea of the condition of a diabetic, or of the amount of starvation and dietetic treatment necessary to rid him of his glycosuria and hyperglycemia. Ridding a diabetic patient of glycosuria does not by any means indicate that he is in a state of carbohydrate tolerance. We must, if possible, reduce the blood sugar to somewhere near normal (0.08% to 0.12%). If we can make him sugar free so far as urine is concerned and at the same time reduce the blood sugar to normal, then we have him in a condition where we can have some hope of the performance of ideal normal metabolism. It can easily be seen that the importance of blood sugar determinations cannot be overlooked.

ESTIMATION OF BLOOD SUGAR

A great number of methods have been described for the estimation of blood sugar. Although many of them determine the reducing power of the blood (presumably in a large part glucose) with a high degree of accuracy, and have given us considerable insight into this phase of carbohydrate metabolism, nevertheless most of them have been so technical as to require special equipment and training and are, therefore, not suited to clinical purposes.

S. R. Benedict, who introduced one of the most satisfactory tests we have for sugar in the urine, has performed, in collaboration with Lewis, a similar service for sugar in the blood. The general principle and technic of the method is simpler than that of any other method, and for this reason it is particularly suited to clinical purposes. The method is dependent upon the fact that very small amounts of glucose react with picric acid and sodium carbonate to produce a red color (sodium picramate). In the actual test the picric acid serves the ad-

ditional purpose of precipitating the blood proteins.

There has been much discussion of the blood sugar methods, especially of the new and simpler clinical methods, also, criticisms have been made of the picric acid methods in comparison with the tungstic acid blood filtrate. It is claimed by some that the picric acid method in diabetic bloods in particular give the highest results. While the differences are theoretically very interesting and will probably be suitably explained, they are so small as to possess little clinical significance in themselves.

No attempt will be made to give all of the blood chemical methods but just those used in our laboratory for research and clinical practice in diabetes. For further detail and for other blood chemical tests refer to any standard book of recent date on blood chemical analysis.

METHOD OF PROCURING BLOOD SPECIMENS

For most chemical analyses it is necessary to obtain blood by venipuncture although methods for several of the constituents, e. g., sugar, uric acid urea, are sufficiently delicate that determinations may quite well be made on the quantities of blood obtainable by puncturing the finger. It should be borne in mind, however, that here one is dealing with arterial blood. Some recent observations of Foster[1] are quite pertinent in this connection. He has observed that whereas the sugar content of both venous and finger blood is the same in the morning before breakfast, the sugar content of finger blood is much higher than venous blood after the ingestion of glucose. The blood should be taken in the morning, before breakfast. In other words, if it is not convenient to take the blood before the usual breakfast time, then it may be taken later, but the patient must not eat anything until after the blood is taken. The reason for this is that all data on the normal standards and the pathologic changes have been obtained with blood procured under these conditions. Therefore, for the sake of uniformity, we would recommend this method.

The withdrawal of the venous blood can best be accomplished by the following procedure: Expose the bend of the elbow where a prominent vein can usually be found. In women and men with a good deal of adipose tissue, these veins are sometimes not visible. In such cases, select the wrist or the back of the hand. Place a tourniquet above the bend of the elbow and instruct the patient to double his fist. This assists in distending the veins between the fist and portion of the arm upon which the tourniquet is tied. The skin over the vein is then thoroughly cleansed by rubbing with alcohol. Grasp the forearm with the left hand, draw the skin tense with the thumb, and insert a hypodermic needle attached to a sterile syringe in any vein that is prominent. The syringe should be moistened with a 20% solution of potassium oxalate. The blood should be transferred at once to a large test tube or bottle that contains 2 to 4 drops of a 20% solution of potassium oxalate that has been dried in a hot air oven at a temperature sufficiently high to practically sterilize them. The needle should be large—about 19 to 21 gage. It should go through the skin about ⅛ inch from the vein with the bevel at its tip uppermost and should enter the vein obliquely from the side, this requiring two movements, one to puncture the skin and one to enter the vein. If the needle is pushed through the skin directly over the vein, the vein is likely to roll to one side, thus escaping the needle. Unless too small a needle is used the blood will begin to rise in the syringe as soon as the needle has entered the vein. Suction is rarely, if ever, necessary.

When sufficient blood is obtained the tourniquet is removed and then the needle is withdrawn, this order being followed to avoid formation of a hematoma. Five to fifteen c.c. of blood can usually be easily secured. If needle is used that is sharp and smooth, the procedure causes the patient very little inconvenience, seldom more than does an ordinary hypodermic injection. There is seldom any difficulty in entering the vein except in children or in adults when the arm is fat and the veins are small. In the case of infants, blood may be secured from the superior longitudinal sinus by puncturing through the posterior angle of the anterior fontanel. A short needle (about ⅜ in.) of rather large caliber should be used.

MYERS AND BAILY MODIFICATION OF LEWIS AND BENEDICT METHOD OF BLOOD SUGAR DETERMINATION

Reagents required: Picric acid, chemically pure, 0.5 gm. for each determination; saturated solution of sodium carbonate, two or three c.c. for each determination; standard dextrose solution, a 0.02% solution of pure dextrose in saturated solution of picric acid.

Method—1. Place 2 c.c. oxalated blood in a centrifuge tube and add 8 c.c. distilled water.

2. Mix well, and let stand until the blood is completely laked.

3. Add 0.5 gm. dry picric acid and stir well with a slender glass rod. Let stand for five minutes with occasional stirring.

4. Centrifugalize and filter the supernatant fluid through a small filter paper into a dry test-tube.

5. Transfer 3 c.c. of the filtrate to a 10 c.c. volumetric flask. Add 1 c.c. saturated solution of sodium carbonate.

6. Place 3 c.c. of the standard dextrose-picric acid solution in a similar flask, and add 1 c.c. saturated sodium carbonate solution.

7. Heat both tubes in a beaker of boiling water for fifteen to twenty minutes. Cool to room temperature.

8. Make up the unknown and the standard solution to 10 c.c. with distilled water. Mix well.

9. Compare the unknown with the standard in a colorimeter. The calculation is based upon the fact that the unknown represents 0.6 c.c. of blood and the color standard 0.6 mg. of dextrose. With the plunger type of colorimeter (the Duboscq) the following formula may be used:

$$\left.\begin{matrix}\text{Reading of Standard}\\ \text{Reading of Unknown}\end{matrix}\right\} \times 100 = \text{mg. dextrose in 100 c.c. of blood}$$

When the blood sugar is high a standard containing double the amount of dextrose-picric acid

solution must be used, and this requires that the final result be multiplied by 2.

EPSTEIN'S MODIFICATION OF BENEDICT'S METHOD

In a pipette graduated to hold 0.2 c.c. of blood collect that amount of blood from the finger tip (after cleansing with alcohol) and place in a graduated test tube containing a drop of 2% solution of sodium fluorids or sodium oxalate. The collecting pipette is rinsed two or three times with water; the rinsings are added to the blood and water to the 1 c.c. mark. A saturated solution of picric acid is added to the 2.5 c.c. mark, when the mixture is well shaken and centrifugalized. One c.c. of the clear supernatant fluid is pipetted off, boiled down to two or three drops in a suitable test tube; 0.5 c.c. of a 10% solution of sodium carbonate is added and the mixture boiled to the point of crystallization. This takes place when the fluid has been concentrated to two or three drops and turns a brownish red. A few drops of water are added, the tube is warmed and the contents transferred to a calibrated tube accompanying the microcolorimeter that is used (Kuttner-Leitz colorimeter). The tube is then rinsed with a few drops of water at a time and the total volume brought to the mark 50. The color is then compared with that of the two standard color tubes (A and B), which accompany the instrument. If it is darker than A but lighter than B, the former is used as a standard, water being added until the shades tally. The figure on the scale divided by 1000 indicates the percentage amount of sugar in the blood. If the darker tube B is used for comparison, the figure must be multiplied by 2 and the result divided by 1000.

[1]Foster, G. L.: Studies on Carbohydrate Metabolism. 1. Some comparisons of the blood sugar concentrations in venous blood and in finger blood. *Jour. Biol. Chem.*, 1923, lv. 291-301.

(Article XI will be a continuation of the tests used in the diagnosis of diabetes.)

Some Neglected Findings in Uranalysis

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Ordinary uranalyses fail to give as much information as is possible, and they give considerable useless information. There is, of course, no such thing as a "complete uranalysis." The urine is such a complicated mixture of katabolic wastes and the product of the more or less efficient utilization of foods eaten, that a partial study is all that can be made of any given specimen. The best that can be hoped for is that the laboratory work be done in such a manner as to give useful information as to the actual condition of the patient.

For ordinary clinical work the analysis of the food eaten is not necessary, but a list of the foods eaten and approximate amounts of each food should be kept for at least two days before the urine is collected, and, if the urine for an entire day is to be analyzed, this list of foods should be kept for that day also. It is better that this list of foods be simple and short in order that the error due to an attempt to compare many foods in varying amounts with the urinary findings may be avoided. For accurate scientific study, of course, the foods eaten are carefully planned and the foods are analyzed. This is not at all necessary for the clinical work, and the expense of such analyses would usually be prohibitive.

For a fairly accurate study of the elimination of the various katabolic products the analysis of a twenty-four-hour specimen of urine is best. The patient should begin to keep his diet for three days before the day of collecting the urine. He should eat the foods to which he is accustomed and should keep a list of the food eaten at each meal, with the approximate amount of each food. (For example, he may say he had three tablespoonsful of well-cooked oatmeal with one glass of milk at breakfast.) During these days he should not eat any unusual foods or any unusual amounts of food, and he should drink as much water as he usually drinks. He should not do any unusually strenuous work or exercise. The day before the urine is collected, and the day it is being collected, he should keep account of the water and other fluids taken, as well as the list of foods.

At a certain time, for example, at eight o'clock in the morning, the bladder should be emptied and the urine discarded. This means that the twenty-four-hour period begins with an empty bladder. All urine produced thereafter should be kept in a very clean vessel and this vessel kept in a cool, clean place. At eight o'clock that night the bladder should be emptied again and this urine placed in the same vessel. The total amount should then be measured and about a half pint placed in a clean bottle, well-stoppered and marked "dry urine" with the amount produced during the day noted. The rest of the urine can then be discarded and the vessels rinsed and dried. Thereafter the urine is again placed in the vessel and both this vessel and the bottle kept in a cool clean place during the night. At eight o'clock the next morning the vessels containing the night urine should receive all urine remaining in the bladder and the night urine measured and recorded. About a half pint of this urine is placed in another bottle and marked "night urine" with the amount noted.

If the urine is not sent at once to the laboratory a third specimen is secured. This is a single voiding and is produced just before the urine is sent to the laboratory. This bottle is marked "fresh urine." The three bottles should then be wrapped with a paper giving the name and address of the patient, the name and address of the doctor in charge of the case, the diet list, and some history of the patient's condition. The last requirement is made because there are certain rare conditions in which unusual tests are of great value. For example, in an unusual form of paralysis the presence of the Bence-Jones albumose may make the diagnosis certain. There are so many of these spe-

cial tests for special conditions that it would be impractical to make them all as a routine procedure, yet in selected cases they may be of tremendous value. Indeed, in all laboratory work the best service can be given if the laboratory worker is really a consulting physician and all possible information given with the specimen to be examined.

This twenty-four-hour collection is sometimes impractical, especially for wage-earners. For ordinary cases it is not necessary. The examination of two single voidings may give all the information necessary. For the analysis of single voidings a list of the food eaten, with approximate amounts of each article, should be kept for one or two days. The amount of water and other liquids ingested should also be reported. The classical use of the first morning voiding has little to commend it. Very often kidneys are able to work efficiently so long as the patient rests, but are not able to perform their proper functions during the day. There is a considerable amount of elimination during the night, and in certain forms of nepthropathy the night urine gives more useful information than the day urine. The morning urine usually reaches the laboratory in a fresher condition than the day urine. Hence, two specimens should be sent, one voided late in the afternoon, before the evening meal, and the other voided early in the morning. If only one specimen can be sent, the afternoon voiding is better.

The actual elimination of the various urinary salts varies at different voidings, but the relation between the excretory substances remains almost or quite constant at different voidings. Hence, it is not possible to determine the actual amount of any one substance voided during twenty-four hours by the examination of only one or two voidings, nor is it possible to determine whether the kidneys are eliminating as much of any one constituent as should be eliminated upon the given diet or not. But it is possible to determine whether the relationship between the various urinary constituents is normal or not, and also whether there is any gross pathology of one or more of several important organs of the body.

SPECIFIC GRAVITY

The specific gravity varies greatly with the amount of liquids ingested, and unless the water intake is reported, the specific gravity alone gives little information. This condition has affected examinations for life insurance in an unpleasant manner. When urine is examined during the course of such an examination, the specific gravity is usually considered important. If the subject being examined has been drinking freely of water the specific gravity is, naturally, very low and it sometimes occurs that applicants for life insurance are refused on just that basis. Under such conditions the only thing necessary is for the subject to refrain from drinking much water or other liquids for a day or so, when the urine so produced will be found to have a much higher specific gravity. Since life insurance methods are based upon estimations of specific gravity made on a certain water intake, it is only fair that the applicant should have his urine examined when it has been produced upon that same water intake.

ACIDITY AND ALKALINITY

The reaction of the urine bears a certain relationship to the variations in the alkalinity of the blood stream. When urine can be tested at each voiding, while it is still very fresh, as is possible in a hospital or sanitarium, the accurate estimation of the degree of acidity of the urine may give very useful information under certain conditions. As soon as the urine is voided it is apt to be contaminated with putrefactive or fermentative bacteria, and these change the reaction very quickly. Evaporation and exposure to the atmospheric constituents may also change the reaction. The reaction varies considerably during the day. It is, then, evident that any really useful estimation of the acidity or the alkalinity of the urine must be based upon the tests at each voiding, while the urine is still fresh, and that the amount of the urine at each voiding should be measured and the determination of the reaction be based upon the volume passed as well as upon the actual reaction at each voiding. When the variations from the normal are extravagant, however, some useful information may be secured from estimation of the reaction of the urine under ordinary conditions of analysis.

UREA AND URIC ACID

The actual amount of urea and of uric acid voided can be determined only if the urine has been kept for the entire twenty-four hours, and this information is useful only if the amount of nitrogenous foods ingested is reported for the day of the collection of the urine and for one, better two, days previously. The type of food eaten as well as the amount should be reported. For example, if proteid foods include a large amount of eggs or of food containing eggs, the sulphates of the urine are apt to be high, whereas the uric acid may be normal or even a little lower than average normal. The relation between the urea and the uric acid and the sulphates remains fairly constant throughout the day, if the food remains fairly constant. Hence a single voiding may tell whether a relative excess of one or the other of the nitrogenous wastes exists. Urea should be from forty-five to fifty times the uric acid in human urine. It should be remembered that urea represents the more efficient form of nitrogenous waste. Lower animals tend to eliminate nitrogenous wastes as uric acid and related compounds. The higher the stage of development of the excretory system, the greater the relative amount of urea eliminated. Whenever there is any disturbance in the functions of the liver, there is an increasing elimination of a relatively greater amount of uric acid and other purin compounds. The oxidation processes, in other words, stop short of the formation of urea. When the functions of the kidneys are impeded there is a tendency to the accumulation of the nitrogenous waste in the blood stream. The total non-protein nitrogen, the urea, the uric acid and the creatinin, in order, are found at increasingly higher levels in the blood stream.

When the uric acid is relatively lower than

the amount indicated by the urea excretion, estimated according to diet for the previous two or three days, some disturbance in the renal functions should be suspected. This disturbance is shown by other urinary findings also in most cases. When the uric acid is relatively higher than is indicated by the urea excreted, according to the diet, then some disturbance in the liver is suspected. However, if the patient suffers from leukemia or from leukocytosis due to any other cause, the relative amount of uric acid and other purin bodies may be increased on account of the nuclear metabolism of these cells. Among other dietetic conditions affecting the urea-uric acid relationship is the ingestion of sweetbreads, liver, kidneys or other glandular foods. When these are eaten the uric acid is relatively higher according to the urea than is the case when ordinary meat is eaten, because the glands contain a larger amount of nuclear substance than muscle tissue. Ordinary meat contains a larger amount of nuclear substance than eggs, and the uric acid is relatively higher on meat than on eggs. Eggs are higher in sulphates, however, and this must be remembered in estimating the excretory conditions produced on any given diet.

Disturbances in the urea-uric acid relationship may be due to the effects of vertebral or costal lesions acting on the liver. It is not at all necessary that the recognition of hepatic inefficiency should lead to a diagnosis of serious structural disease of the liver, though this may, of course, be present in any given case. But just vertebral or costal lesions may cause recognizable disturbances in the elimination of proteid wastes, and the correction of these lesions may result in immediate return to normal functions of the liver with return to normal excretion of the wastes of proteid katabolism in the urine.

Disturbance in the urea-uric acid relationship may occur also if a rapidly growing tumor, a degenerating mass of pus, marked circulatory disturbance in any large area of the body, or any one of several more rare conditions is present. These conditions are usually recognizable, or at least there are symptoms or other findings which cause them to be suspected.

INORGANIC SALTS

Variations in the elimination of the inorganic salts, especially the chlorides and phosphates, are usually due to variations in the intake of these substances. A diet largely vegetable increases the phosphates. The use of much table salt increases the elimination of the chlorides. Elimination of a high amount of chlorides on a non-salt diet may be due to the chlorides in vegetables or to the elimination of a high amount of retained chlorides. The latter is especially noteworthy after high fevers or other conditions associated with retention. When hyperchlorhydria is marked there is an increase in the elimination of urinary chlorides. The source of this chlorine must be the food and the tissues of the body, and yet there may be a persistent loss of urinary chlorine associated with hyperchlorhydria in the face of a low chloride intake, which is occasionally most puzzling.

INDICAN

An increased amount of indican in urine presents many interesting aspects. Indican is a general term which includes several related compounds containing sulphur and associated with protein decomposition of some sort. These compounds probably include most of the endogenous sulphur eliminated in urine. They are derived from several sources. The most common and abundant source of indican is the presence of putrefactive material within the intestinal tract. If the constipated individual eats much meat indican is usually very abundant. The person whose intestinal tract contains a relative excess of putrefactive bacteria usually eliminates a high amount of indican in urine, though he may not eat much meat. In such cases the odor of the stools is very unpleasant. (Normally there is no unpleasant odor about stools and when this is noted the source of the odor should be found and removed.)

Excess of indican may be due to the putrefaction of material within pockets or abnormal diverticula along the intestinal tract. In one case indicanuria persisted for years and was associated with symptoms of intestinal toxemia and with amebic infection although all the usual methods of cleansing the intestinal tract, the correction of spinal lesions and attempts at changing the intestinal flora had been employed persistently, and many special diets had been tried. At the autopsy a peculiar deformity of the small intestine was found; a series of small pouches made a sort of fringe along the mesenteric line of the intestine from just below the duodenum almost to the ileocecal valve. Within these pouches were masses of amebae and also of badly degenerated food remnants. There were hundreds of the tiny pouches and it is impossible to conceive of any method by which these could be properly emptied under normal conditions or by the use of any therapeutic method.

Indicanuria is usually profound when there is a rapidly growing cancer or when there is any serious disease of the liver. Cancer of the liver or the stomach and cirrhosis of the liver are especially apt to produce marked indicanuria. The hepatic disturbances due to bony lesions alone are less often associated with indicanuria.

ALBUMIN

Albumin may be found in the urine under many conditions not associated with renal disease, as well as when the kidneys are affected. If urine is stale when it reaches the laboratory the bacteria may be sufficiently abundant to give a marked reaction for albumin. The dead bacteria may be so degenerated that the removal of their bodies by filtration or centrifugalization leaves the albuminous residue dissolved in the urine.

Material derived from the genital tract and the bladder may give a reaction for albumin also. It is occasionally necessary to secure a specimen by ureteral catheterization in order to determine whether the albumin is of renal origin, and, if so, which kidney is affected, or whether both kidneys are affected. Globulins are not usually present in recognizable amounts unless the albumin is de-

rived from the blood plasma, and the presence of globulins in large enough amount to be recognizable by ordinary tests for urine indicates renal incompetence or definite renal pathology. Nucleoalbumin is not derived in recognizable amounts from the blood plasma, except under very unusual conditions, and the presence of any considerable amount of this substance associated with a small amount of albumin suggests that the albumin may have been derived from the genital tract.

Renal albumin is present very often when there is no other evidence of renal disease. This is of especial osteopathic interest since it may be the sole recognizable effect of lesions of the lower thoracic or the dorsolumbar vertebrae. Such a form of albuminuria is described in many medical texts as "orthostatic albuminuria" and is supposed to occur only in certain persons and in these only when they stand for considerable periods of time. Osteopathic reports find no person with "orthostatic albuminuria" who do not also have lower thoracic lesions. Periodical albuminuria or constant albuminuria is always present in an individual with a lesion of the eleventh or twelfth thoracic vertebrae. Definite renal disease follows this form of albuminuria in time, and the correction of the lesion within a reasonable time is always followed by relief of the albuminuria and return to normal renal condition.

The evidence of definite renal disease and the significance of the urinary findings in the various types and stages of diseases of the kidneys are often and fully discussed, and are beyond the purposes of this paper, which is devoted to findings usually neglected.

ABNORMAL PIGMENTS

Abnormal pigments may be present in urine which appears very pale in color when voided, and which may become even paler as it becomes more stale. Occasionally the urine is abnormal in color when voided or assumes some strange tint on exposure to the air. These conditions are discussed in ordinary books on uranalysis and cannot be considered "neglected findings." But the fact that many urines contain small amounts of abnormal pigments and yet retain their pallor is often forgotten.

Bile pigments may be present in considerable amounts without causing enough change in tint to be noticeable; indeed, the urine may seem paler than normal and still contain quite a heavy mixture of bile pigments; bile salts, of course, do not change the color at all. By means of suitable treatment of urine the rainbow tints due to bile may be brought into view. The significance of this bile in urine depends upon many factors. The fact that the circulation of the blood through the liver may be disturbed as a result of vertebral and costal lesions is of great interest, since the correction of such lesions is followed by relief of the choluria and of the symptoms of cholemia usually associated with choluria.

Pigments derived from hemoglobin may also be present in the urine in considerable amount without causing noticeable change in color. This finding is of increasingly serious import. On account of the use of the gasoline engine the air in cities is becoming more and more vitiated. In eastern cities the use of fluids which prevent the engine from becoming chilled in winter adds seriously to the contamination of the air. Over abundant application of oils adds to the evils. Incorrect use of the gasoline engine leads to the imperfect oxidation of the gasoline. Carbon monoxid is produced in constantly increasing amounts. Even the air out of doors is unfit to breathe during the rush periods in cities and towns. Many persons take care of their own engines and do the work within a garage, often not well ventilated, and breathe great amounts of carbon monoxid and other products of imperfect combustion of gasoline, oil and anti-freeze mixtures. It is becoming more and more common to find blood so abundantly supplied with carbon monoxid hemoglobin that the tint of the oxyhemoglobin is modified and an estimation for hemoglobin based on color—as is the case with most hemoglobinometers—is inaccurate. The peculiar cherry-like tint of the carbon monoxid hemoglobin may be easily perceptible in the drop of blood drawn in making a blood count or hemoglobin test. This carbon monoxid hemoglobin is a stable compound. The red cells which contain it must be digested by the autolytic ferments of the blood, dissolved and excreted with the urine or the bile and new blood corpuscles made in the red bone marrow to take the place of the ones destroyed. The dissolved hemoglobin is toxic and the demand made on the reserves of the body for the new blood cells causes malnutrition and often a mild secondary anemia. The hemoglobin derivatives from these destroyed cells may be found in the urine by means of an appropriate manipulation, and of course the recognition of the condition suggests at once the best means of treatment.

SUGAR

The presence of any form of sugar in the urine usually arouses considerable interest. Milk sugar is usually present in the nursing mother and in late pregnancy. A meal too rich in carbohydrates very often is followed by glycosuria. Disturbances in the circulation through the liver (probably also the pancreas) due to bony lesions may be associated with glycosuria. Whenever there is enough sugar of any kind to be recognizable by the ordinary uranalysis tests the condition should receive further study. A diet which contains enough carbohydrate food to cause glycosuria should be modified. The most successful treatment of diabetes is begun at a very early date. The great importance of osteopathic treatment in diabetes must be recognized.

MICROSCOPIC EXAMINATION

The microscopic examination of the urine is too often neglected. A very fresh specimen of urine is best for this purpose. The chemical substances used for preserving the urine may or may not preserve the more delicate structures. Casts are especially often destroyed, both by the changes occurring in urine after it is voided and also by preservatives. Materials derived from the genital tract often confuse the findings, unless care is taken to avoid contamination. Catheterized specimens are often preferable for careful examination in selected

cases. Ureteral catheterization is of great importance when it is necessary to determine which kidney is affected, and also when it is necessary to determine the exact source of pus or of cancer cells found in the urine.

The presence of cancer is often overlooked. Cells derived from cancer of the bladder or from a kidney invaded by hypernephroma may give certain and definite information in cases which otherwise might present great difficulties in diagnosis.

This paper was not intended as a discussion of the value of uranalysis but as a reminder of some factors often neglected. If it shall call the attention to some points which may be used in securing more thorough and definite information of the condition of the patient in difficult cases, its purpose will be very well attained.

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Establishing a Foot Practice

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V

BUNIONS

A careful study of broken arches, and the effect of the various types of shoes on this condition, led me to arrive at certain conclusions regarding the mechanical disturbance known as hallux valgus. *Broken arches and hallux valgus are the result of the same vicious forces working on the feet.* One cannot carefully study the mechanics of the production of broken arches with the resulting strain, disturbed balance and improper weight-bearing without recognizing the same mechanical principles that throw the great metatarsophalangeal joint into a chaotic state.

Early in research work on feet, I was thoroughly convinced that hallux valgus (which is the deformity that produces the bunion) was not primarily an enlarged joint or enlarged bone in the great toe. As further work on bunions progressed, I observed conclusive evidence that proved the original ideas, and consequently I cannot agree with the common procedure of removing the head of the great metatarsal bone to relieve bunions. This is too severe and fraught with no little hazard as to the future function of the foot. This article contains evidence to support my ideas that bunions come from a disarrangement of the entire foot that results in the vicious position of the head of the great metatarsal bone. Whatever bone and joint changes take place, I consider secondary and of minor importance. So a protruding bunion joint is really a symptom of general foot malalignment.

In reviewing the literature on bunions, one runs into a lot of theories as to the cause of bunions, but none takes the entire foot into consideration. I have never read any discussion regarding the relation of broken arches to bunions. It seems to be an accepted fact that hallux valgus is the entire disease entity, and all the attention is focused on the joint itself. The multiplicity of articles written on this subject is too great to consider all of them in this brief discussion.

Some surgeons consider the development of a supernumerary bone between the internal cuneiform and first metatarsal, that shoves the first metatarsal inward, to be the direct mechanical cause of bunions. I have seen many bunions without this supernumerary bone, and have seen many normal feet with this bone. And furthermore, I have often wondered if the overlapping shadows of the joint surfaces at this joint have not been misinterpreted by many observers to be a supernumerary bone. The lack of confidence in this theory is apparent in that its supporters proceed to operate on the head of the bone, and thereby ignore what they call the cause.

Most surgeons operate on bunions without giving the cause any thought, and consequently mutilation of this joint and destruction of this important weight-bearing point goes on in a ruthless manner.

To Dr. H. A. Robinson goes the credit for his discovery in 1915 of the relation of sesamoid bones to bunions, and for being the first surgeon to remove them. He says in part ". . . bunion is a dislocation of the metatarsophalangeal articulation of the great toe, and the dislocation is caused by the action of the sesamoid bones separating the first from the second metatarsal bone." " . . . shoes never produced a bunion in the world" . . . "the tendency to bunion is hereditary in every case." In a letter to me, Dr. Robinson says "the first metatarsal does not slip off but is positively ejected and from no choice of its own."

I agree with Dr. Robinson in so far as he says that bunion is primarily a dislocation of the metatarsophalangeal joint, but I believe the mechanical forces, which will be described later, refute the rest of his argument regarding heredity as a cause and the lack of any action of shoes in the etiology of hallux valgus. For sesamoid bones to "eject" anything they must contain, in themselves, a force or mechanism to produce a force, and a simple study of anatomy precludes any such idea. On the other hand, shoes made over improperly proportioned lasts do produce strain in the foot and immediately set up a force that is detrimental to the first metatarsophalangeal joint, the sesamoid playing a secondary role in the start and later producing a vicious complex in the action of the joint during walking. Hereditary joint weakness of ligaments all over the body will have its influence in the joint under discussion, but I cannot see how anyone can inherit a condition that is apparently acquired. The chief trouble is we have all inherited the same faulty types of shoes.

The points I want to emphasize in this article are that *bunions are not caused by an enlarged joint or enlarged bone; that any osteophytic outgrowth on the mesial side of the great metatarsal is secondary; and that bunions are produced by mechanically disturbed joints in walking and not by any static malposition of the great toes.* This latter complex will now be discussed from cause to effect.

Broken arches and bunions are closely associated in their cause as well as in the mechanical changes that take place in the foot. One of the early signs of broken arches is outward turning of the foot known as eversion. The relation of the disturbed "triangle of balance" and broken arches to

foot strain and limited action was thoroughly discussed in my second article. In order to make this article complete, I will outline a few of the points previously mentioned. Figure I shows the left foot out of line (everted) and the right foot normal. This changes the mechanism of walking. Figure II shows the normal sequence in walking. The heel is planted on the ground first, then the load is distributed involuntarily from the heel to outer side of the foot and then diagonally across the ball to the great toe. The step is completed by the use of all the toes. The great toe should point straight forward.

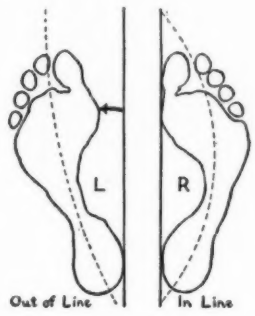


Fig. I

Outward turning of the foot changes this orderly sequence of weight distribution as shown in Figure III. In this case, the weight bearing will make a short cut from the heel to the great toe joint and then off the side of the great toe. *This is the common method of walking when the arches are broken, and has a definite bearing on the production of bunions.* Figure IV shows the bottom of a foot with a typical bunion. Excessive weight is focused at the point marked by the black spot. Just so long as the bunion joint is made to bear extra weight, it will be painful.

Fig. II

With the foot out of line the tendency is to walk over the side of the great toe joint with a twisting motion on this joint.

Figure V is a diagram representing the hinge-joint action across the toes, and proper usage of the foot in stepping—with all the toes pointing straight ahead.

Figure VI shows the improper method of walking when the toes are turned out—the patient actually walks over the side of the hinge, thereby injuring the great toe joint.

Fig. III

Now we will consider the changes in the great toe and the foundation beneath it, in order to understand how *bad alignment* of whole foot, *excessive weight bearing* and the *hinge-twisting* action will cause a protruding bone and a bunion.

Fig. IV

Bunions, like broken arches, are caused primarily by improper shoes that disturb balanced mechanism of the feet. Figure VII shows a foot imprint in relation to the sole of a shoe. The great toe is firmly held by the cap of the shoe at point A, and the heel by the counter at point B. As shoes usually do not have proper proportions at point C, a pressure is exerted here which is transmitted to the great toe joint, where it shoves this joint inward (toward the mid-line of the body) and dislocates the great metatarsal from its base. The whole foot is thrown out of alignment. I do not believe that short shoes have much to do with causing bunions, because the pressure on the toes necessary to produce a bunion would be so severe that the patient could not stand it. However, pointed shoes are no doubt a contributing factor in bunions.

Fig. V

Point C, which I describe as not being properly proportioned, is caused by improper distribution of the wood in last making. This point is called the "cuboid" by the last makers, and they have recently added more wood in this area in comparatively few of their lasts. When lasts are made with insufficient wood at this point, the shoes will not have room enough here and will cause an inward pressure on the foot, and consequently an inward thrust on the matatarsals.

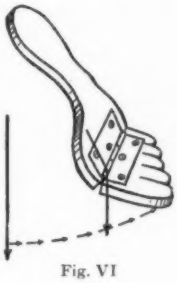


Fig. VI

Now the arches of the foot rest upon a rather delicate foundation. In Figure VIII is shown the forepart of the arches lifted upward in order to show the base or foundation beneath. This base (shown in solid black) is made up of muscles, tendons, and dense fibrous tissue, and extends from the heel bone to the toes. The object of this simple diagram is to point out a very important mechanical fact that in my mind is the fundamental anatomic weakness that permits bunions to form. That is: *the chief muscles and tendons in the plantar region have their distal attachment to the phalanges and not to the metatarsal bones.* The plantar fascia, even though it attaches to the transverse ligament of the heads of the metatarsals on each side of the toes, has a mesial portion that is very weak and is nothing more than an aponeurosis, the fibers of which mingle with the fibers of the capsule of the first metatarsophalangeal articulation. This inherent weakness offers no resistance to the inward thrust put upon the head of the great metatarsal by shoes. The structures having a definite relation to the great toe can be shown better by a more detailed illustration.

Fig. VII

Fig. VIII

Figure IX is more or less diagrammatic showing the attachment of certain muscles into the proximal phalanx of the great toe. This shows (1) the transverse and oblique portions of the adductor hallucis inserting into the lateral portion of the base of the proximal phalanx at A; (2) the flexor brevis hallucis (the double tendons of which contain the sesamoids XX) inserting into the plantar aspect of the base of the phalanx at A and B; (3) the abductor hallucis tendon inserting into mesial portion of the base of the phalanx at B; and (4) long tendon of the flexor longus hallucis traveling between and beneath the sesamoids and inserting into the base of the distal phalanx. Now look upon this arrangement as a sort

of chassis or base for the head of the great metatarsal to rest. The most significant fact to fix in your mind here is that *none of these structures is directly attached to the head of the great metatarsal.* The proximal phalanx, muscles, tendons and sesamoids just described form more or less a fixed base; while the great metatarsal head being *essentially unattached,* is the victim of any inward or diagonal thrust from shoes, and is forced to move mesially off this foundation. The abductor hallucis loses its power of abducting the great toe after shoes have been worn for years, and becomes more or less fused with the joint capsule at point C. While this tends to strengthen the mesial side of the joint, it is not sufficient to overcome the antagonistic action of the abductor hallucis which will *abduct the great toe* and becomes another factor in aiding the great metatarsal to slide inward.

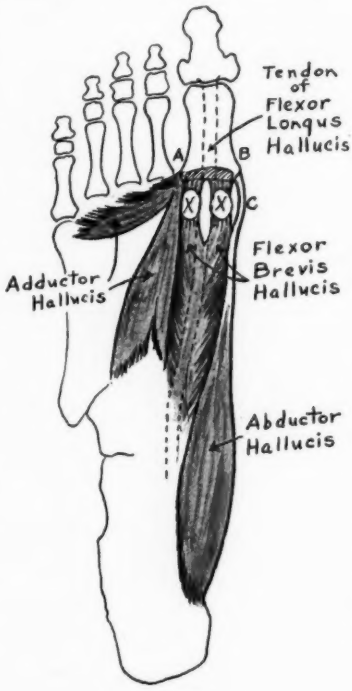


Fig. IX

To sum up the situation, we have a *diagonal thrust* on the great metatarsal by shoes; a *fixed base* for the great metatarsal; a *loss of abduction* thus giving the antagonistic muscles free play as to adduction; and a *lack of any fixation of the head of the great metatarsal* to resist these forces

Now to give a clear vision of what happens, I am going to resort to simple diagrams again. Figure X is a top view of the normal foot showing the metatarsal heads resting squarely on the foundation or base (shaded portion). Now compare this with Figure XI which shows the great metatarsal M shoved from the base by shoes.

This is conclusive evidence to me that hallux valgus is primarily a dislocation, and not an "enlarged bone" or "enlarged joint." Any osteophytic outgrowth that may be present is due secondarily to pressure and irritation. I believe that the anatomic position of the great toe has been sufficiently explained, but as the saying goes, "the worst is yet to come." As the result of the anatomic changes just described, a vicious mechanopathologic action takes place in this joint with each step and constitutes the real cause of the suffering.

Figure XII is a close-up of the normal condition, beneath the first and second toes. The tendon B and the two bones marked XX, lie just beneath the head of the great metatarsal bone and help to form the foundation at this point. Compare this with Figure XIII in which the great metatarsal head has been pushed off its base. The space A between the metatarsal heads has widened, the tendon B and sesamoid bones XX are not under the great metatarsal now, and a bunion has formed at C, due to the misplacement of the normal bone, and not due to any enlargement.

After the great toe is thrown out of line, walking increases the deformity. *Weight-bearing pushes the small bones XX up between the toes, shoving the great metatarsal over still further. The tendon B now acts as a bow-string and every pull of this tendon buckles the bones still more, and pulls the great toe over on its side.* So the patient keeps buying wider and wider shoes and the bones keep spreading more and more.

It is significant to understand, at this point, that the difficulty is really one of *locomotion* rather than position. That is to say, the *repeated shoving of the head of the bone over and buckling of the bones with every step are more responsible than the crooked position of the toe.* Bunion is a disease of *vicious toe action instead of abnormal toe position;* aided and abetted by excessive strain and distorted walking.

Fig. X

Fig. XI

To further prove these facts, observe the roentgenogram in Figure XIV. This is almost like a moving picture showing how bunions occur. Number 1 is a normal foot, 2 is beginning displacement, 3 is more advanced, and 4 is complete dislocation of the great metatarsal head. Observe the progressive widening of the space A, between the toes, and the gradual protrusion of the great metatarsal at C. The flexor longus hallucis tendon will not show in a roentgenogram, but its position can be ascertained by observing the position of the sesamoid bones XX, which gradually work up in between the first and second toes. Also note that the great metatarsal head does not change shape or enlarge to any great extent.

As has been mentioned before, what bony changes take place are secondary. After the vicious buckling of the bones with each step has been going on for some time, there forms an osteophytic growth of bone, in some cases, on the mesial aspect of the head of the great metatarsal. This comes from pressure irritation of the periosteum. Irritation of the skin over this point causes a bursa to form, which may become inflamed and infected, and thereby produces the bunion. I believe the failure to realize that bone changes are secondary has been responsible for the removal of the great metatarsal bone by most surgeons.

The plantar aspect of the great metatarsal head normally presents a median ridge with shallow grooves on either side for the sesamoids. Figure XV-A. This drawing shows the distal end of the

head of the great metatarsal with the sesamoids beneath. The mesial or diagonal thrust placed on the great metatarsal bone by shoes causes this bone to move off of the sesamoids. This affects pressure on the median ridge by the mesial sesamoid; and this process continued over a period of years frequently causes a gradual absorption and flattening of this ridge until the ridge disappears. Figure XV-B. A flattening of the medial ridge obliterates the grooves for the sesamoids until we have a perfectly flat surface under the metatarsal head. Figure XV-C. Then further displacement of the head of the bone, off of the sesamoids, is a simple matter of skidding. On the other hand, I have seen cases in which the lateral thrust caused the great metatarsal head to move mesially until the outer growth rested on the inner sesamoid, and the outer sesamoid rested against the outer side of the metatarsal. Figure XV-D. These bony changes and lateral motion in the joint account for the pain underneath. I do not believe that this pain has ever been accounted for by previous theories regarding hallux valgus.

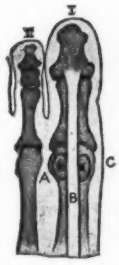


Fig. XII

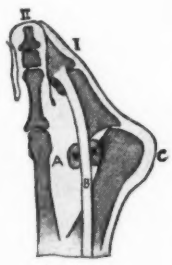


Fig. XIII

The external signs that can be observed show conclusively that the mechanism described in this article is correct. The inward thrust of the great metatarsal head produces a bunion, swelling, inflammation and sometimes a corn. The bowstring action of the flexor longus hallucis not only pulls the great toe outward, but it gives the phalanges a twist on their long axis causing the mesial aspect to rotate downward and making a callus under the mesial wing-like prominence of the distal phalanx. The inward thrust of the great metatarsal head pulls the leather of the shoe with it and causes pressure on the little toes, while the outward pull of the great toe jams these toes against the leather. This antagonistic motion in walking causes corns on the little toes, soft corns between the toes, and often shoves some of the middle toes upward to make the condition known as hammer toe. This entire malfunctioning puts the whole forepart of the foot out of commission and is an important factor in producing anterior metatarsal trouble and calluses, as explained in a previous article.

I have heard some men say that they have seen bunions in cases in which the arches were not broken. The argument usually rests on what the vague term "broken arch" implies. In a previous article I defined a broken arch as any interruption in the continuity of the normal line of an arch or separation or change of the contact of any of the arch bones. I also went into considerable detail to show the weight-bearing changes, and interference with balance and distribution of the load. As separation of the bones in the arches may be present without symptoms (until the element of strain enters in), a roentgenogram will not reveal the condition of the arches, and because most patients with broken arches do not have any falling of the arches, I am confident that the presence of broken arches and their relation to bunions has been overlooked by most physicians, orthopedic men included. I am confident that broken arches are present in practically all cases of bunions; and that the failure to recognize this point is due to oversight on the part of the examiners.

TREATMENT

The treatment for bunions is both manipulative and operative, and should be designed to correct the entire foot, and thereby focus the weight at its proper place. I have treated in the neighborhood of seven thousand feet with broken arches, a large percentage of which had bunions, but I have never been able to correct the deformity of hallux valgus by manipulation alone. It is true that I have been able to relieve the pain in a great many cases by correcting the broken arches. The results obtained this way, led me to see the relation of broken arches to bunions. But even though I did relieve some, I know now that it is impossible to correct the advanced deformity due to the bony changes that take place. The vicious mechanism in walking would not permit the bones to stay in place, even though they were set.

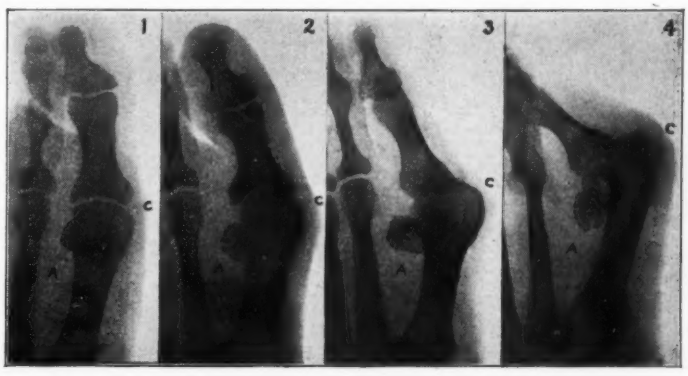


Fig. XIV

The operative procedures are varied, but most of them are directed toward the effect and not the cause. I consider removal of the great metatarsal head to be too severe a procedure, done with total disregard for the cause of the trouble, and fraught with too much hazard as to future function of the joint. The method of Heuter and Mayo is the entire resection of the head of the metatarsal with interposition of a flap containing the bursa.

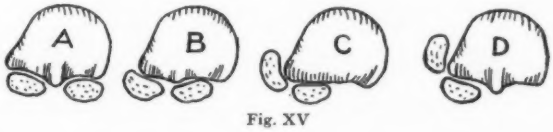


Fig. XV

Jones and Lovett say: "Free exsection of the head of the first metatarsal bone, with interposition of a flap of tissue, or of part of the bursa, is not always satisfactory in persons who are always on

their feet, though it has proved satisfactory in those who do not have hard walking. The reason is that the head of the bone is an important part of the weight-bearing apparatus, and must be preserved where possible."

Goldthwait says, " . . . the head of the metatarsal should be disturbed as little as possible, and instead of removing it entirely, as with the Heuter operation, nothing more than the prominence upon the inner side should be removed, while if it is necessary to do more in the correction of the deflected position of the toe, this should be accomplished by removing the base of the first phalanx."

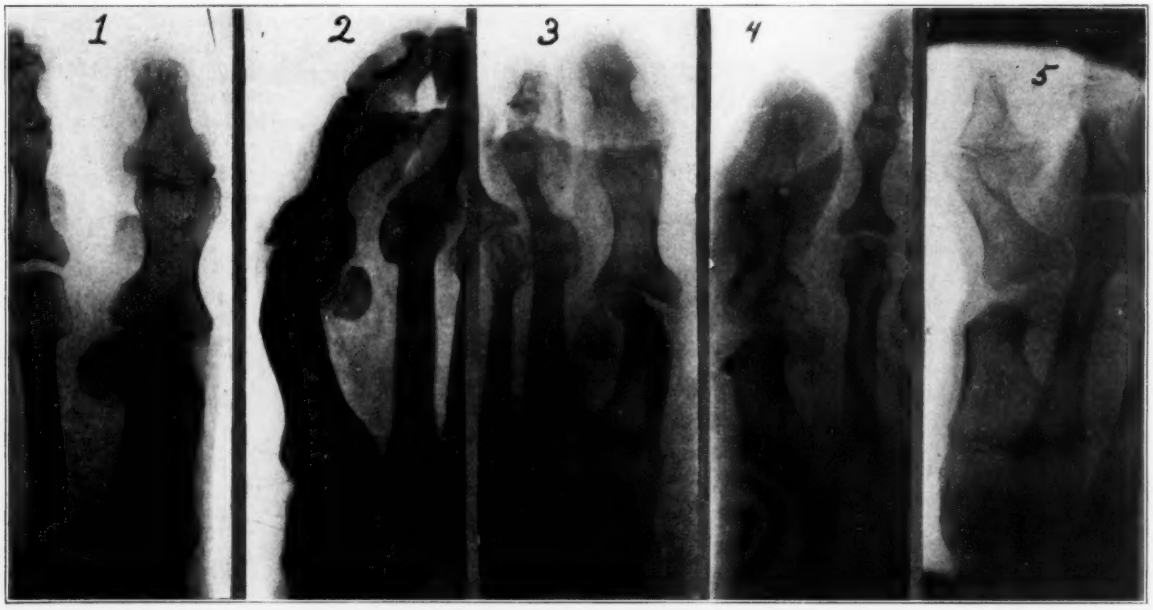


Fig. XVI

In Figure XVI are shown Roentgen ray photographs of five cases after the head of the great metatarsal bone has been removed. Number 1 is a case in which the great metatarsal has been removed after the method of Heuter, and a flap containing the bursa interposed between the bones. Functional result is good but the patient was six months in learning to walk. The foot has a deformed appearance. The foundation has not been corrected. Number 2 is a case operated by the method recommended by Goldthwait. The prominent part of the bone, which is really the normal bone in a vicious position, has been removed. About the mesial half was taken off. You will notice that the toe is still in malalignment and sliding off the base. This joint does not buckle because it is ankylosed, from the operation, in an adducted and dorsiflexed position. I recently reoperated a case of this kind (not ankylosed) and had to correct the foundation before the patient could get relief. Number 3 is a case that was first operated by the method shown in Number 2. But the joint still buckled, so the same surgeon "did a Mayo" on the joint and removed the head of the bone. This completed the job—the patient is crippled now. Number 4 is a case that was operated upon, supposedly by the Mayo method; but I am sure Dr. Mayo would not recognize either of these as the operation bearing his name. Too much of the head of the bone has been removed, and it looks as though the shaft was obliquely fractured and the fragment removed. Needless to say this patient is a cripple also. This joint has been mutilated and the most important weight-bearing point in the front of the foot destroyed. Number 5 is a lateral view of the same case. Now it is easy to see why the patient is crippled. The sesamoids were not taken into consideration, and now they are wedged up between the roughened end of the great metatarsal shaft and the base of the phalanx. This is irreparable mutilation. I believe that these cases are convincing that interference with the joint and metatarsal weight-bearing point is dangerous, especially in the hands of surgeons not accustomed to joint work. No doubt there are many functional results after the Heuter-Mayo operation, but this procedure I consider to be too severe, too hazardous, and requires too long a convalescent period.

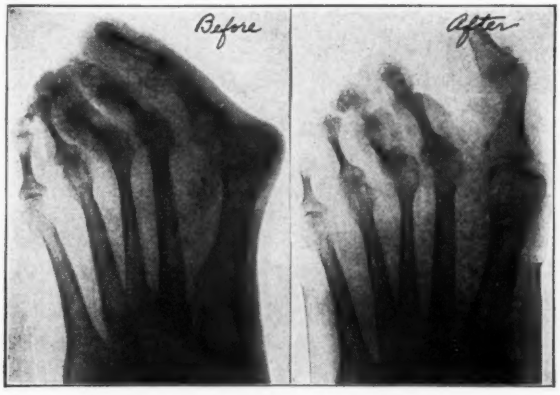
THE "BASE CORRECTION" METHOD

I apply the name "base correction" because the treatment, which is both manipulative and operative, is directed toward reconstruction of the foundation of the whole foot. Recognizing hallux valgus as a deformity and perverted function, arising from forces that do other damage to the foot, the treatment has for its purpose the correction of the entire foot, and thereby eliminating any contributing causes found in the arches. By manipulative treatment, I have lessened and relieved the pain in many bunion joints without affecting the relations of the structures in and around the great toe joint in any way. These results I attribute to correcting the weight-bearing forces, thereby lessening the load on

the great joint. The manipulative technic has been described in my fourth article, and is the same as that used for broken arches. By this method I correct the "triangle of balance," reestablish normal weight distribution, line up the arches, and get as much correction as is possible. This takes the extra weight off the bunion joint, releases the lateral thrust on the metatarsal head, and overcomes the "hinge-twisting" action in walking. Now the patient is ready for operation.

The operative procedure is a mixture of several methods, and exactly the same technic is not used in every case. Excision of the sesamoids is always done. Transplantation of the flexor longus hallucis to the mesial side is nearly always resorted to. Frequently a lateral capsulotomy is necessary. Occasionally I have to detach the insertion of the adductor hallucis. Tenotomy of the extensor longus hallucis will be necessary in some cases. At times I have taken a tuck in the abductor hallucis. In cases with osteophytic outgrowth, I remove some of the bone, being careful not to lessen the width of the base of the great metatarsal head. This is done for the appearance only, as I have given relief to many cases without removing any bone from the metatarsal whatsoever. In the roentgenograms that follow, only one case had any osteophytic bone removed from metatarsal, and that was such a slight amount that it is hardly noticeable. All of these cases are completely relieved. Hallux valgus is a mechanical disarrangement, a vicious buckling of the bones during walking, and therefore a correction of the abnormal pulling and twisting action cures the condition.

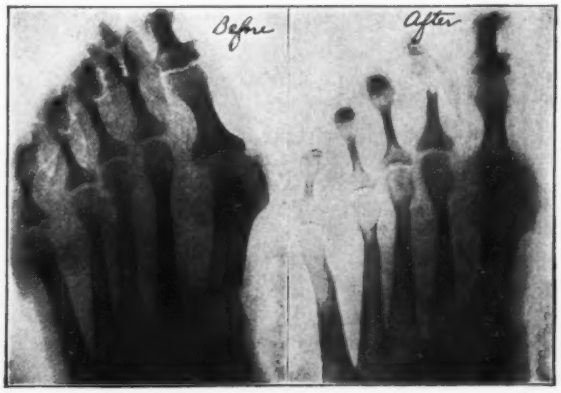
The following Roentgen ray pictures show cases before and after the "base correction" treatment. You will notice that there has been no mutilation of the joint or disturbance of this important weight-bearing point. Particular attention is called to Case 1. This patient, eighty years of age, had the worst bunion I ever saw, and she walked three weeks after the operation.



CASE I

CASE II

CASE III



CASE IV

ENCOURAGING THE OSTEOPATHIC MIND

THIS is one great aim of our literature for the laity. Thousands of people have the beginning of the osteopathic mind—just a seed, perhaps, sown through a friend's recommendation of osteopathy, through a chance story of some osteopathic cure, or by a random statement of the osteopathic concept.

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AN INDEPENDENT, COMPLETE, COMPETENT SERVICE

As a distinct school of therapy misunderstood, belittled or maligned by other schools osteopathy must continue to aspire to stand on its own as an independent school of osteopathic medicine, prepared everywhere to render a complete competent service to humanity.

The osteopathic concept is so fundamentally different from other schools of practice, its scope of application is so broad and so deep as to be inclusive in the realm of disease and its preparation for service sufficiently adequate that it has a right to demand of the law-making bodies and the courts that interpret the laws, distinct and independent consideration. The domination of the allopathic school must be resisted until osteopathy is placed on an equal and independent basis in each commonwealth as it now is in certain favored states.

Osteopathy was discovered and developed and has reached its present state of achievement by reason of the determination of the founders to improve on existing methods of treatment of disease. With this ideal in mind osteopathy ought to so perfect itself that in every instance, case or condition it will be prepared to render the most efficient service and that which is most in harmony with biological law.

The findings of science are the heritage of osteopathy. The facts brought out in the research laboratories of the world are common property.

Osteopathy must grow everywhere from the limitations that have been imposed by law and judicial regulations to the full capacity for service that it is capable of reaching. Evidences of the efficiency of such service were the results of the work of the osteopathic physicians in the flu epidemic which, when the statistics and percentage of recoveries under osteopathic care as compared with other methods were made public, astonished even the members of the profession. They did not know that they had at their finger tips such a powerful therapeutic agent as the comparative figures revealed.

Diseases differ as to causes. Treatment must necessarily differ from simple regulation of the hygiene through all phases of adjustment to the most difficult surgical operation. Our colleges are teaching osteopathic students to be complete physicians and in many states the law now provides that the osteopathic physician can exercise full rights without restrictions, for the good of the patient.

The conditions which obtain in these states should be sought with all earnestness everywhere.

The greatest barriers are the opposition of the allopathic school of practice and the unfamiliarity of the law-makers and the judiciary with the fundamentals of biological and therapeutic science.

In the face of determined and harassing imposition and tyrannical regulations, we have the brilliant example of the profession in California, carrying their fight to the people at the polls and winning by the referendum the unrestricted rights which should everywhere be those of the osteopathic school of medical practice, i. e., on a par with older schools of medicine.

Education is the most efficient weapon that we can use for the accomplishment of the end desired. Most legislators and judges are fundamentally honest and act in accordance with their best belief and judgment, but where they have not had the opportunity to learn first-handed the relationship of osteopathic service to the basic sciences of anatomy and physiology, and to the needs of humanity, their understanding is faulty and they cannot be blamed for seeking the truth from someone whom they may deem an "authority." When the authority sought is prejudiced, hostile and favors the formation or perpetuation of dominance, the opinions gathered cannot be other than biased.

It is our responsibility to so present the facts of the situation that the biological justice as well as the legal and the human rights justice of the osteopathic cause will be apparent to those who make or interpret the civic laws.

To this end every means and opportunity should be sought, seized and developed to the full—to provide for the enlightenment of those who create or expound the laws.

G. V. W.

THE AMERICAN OSTEOPATHIC FOUNDATION

This is a new institution created in conformity to the corporate laws of the State of Illinois which holds much of promise for the osteopathic profession.

Its purpose; the receipt and disbursement of funds and the income from funds for the development of osteopathy.

Its provision for combination professional and business trusteeship assures both good management and judicious application of available funds to professional needs.

Osteopathy in its program of progress can gracefully utilize the foundation as a means to most worthy ends.

In this day of huge fortunes and generous donations, osteopathy thus becomes prepared to receive and safeguard such funds as the philanthropic may care to place at the disposal of this school of practice in all of its branches—educational, publication, research, service and organization. A mechanism to foster the funds received by the

profession from its own members and from lay friends, and grateful patients was most needed, and the Foundation is carefully chartered and prepared when functioning fully to administer such funds efficiently.

G. V. W.

OUR RESEARCH WORK

If any further words were necessary to present a true evaluation of Dr. Louisa Burns and our research work in South Pasadena, then those words were ably penned when Dr. McConnell wrote an outstanding editorial in the March issue of THE JOURNAL.

Many have visited that little ranch. Some perhaps went to criticize and stayed to admire, but no one can go to India and expect to bring back anything unless he takes India with him. One must appreciate research work, its meaning and purpose; one must have some technical knowledge, or those little guinea pigs and rabbits will be just so many guinea pigs and rabbits.

A primrose by the river's brim
A yellow primrose was to him,
And it was nothing more.

No man in our profession is better prepared to return from a visit to this little research farm with an intelligent understanding and measure of the work done than the writer of that March editorial.

He finds Dr. Burns a thorough scientist, running true to type; the work being done fundamental, a very crucible of pure science—confirming or discarding the old, establishing osteopathic pathology, making for specificity, correlating the basic facts on which our clinicians make good, making for the confidence and respect of the public.

The trip instills additional confidence into our profession, he declares, and then assures us again that all our disagreements arise from mutual misunderstanding of purpose, methods and premises, which can be ironed out when parties meet on a common ground of respect and understanding.

A lot of us would profit by rereading the editorial, and all of us would do well to visit Sunny Slope.

WHAT DO YOU SEEK?

Richard Bright in 1827 wrote a book in which was his original, pioneering description of essential nephritis. Crude were the laboratories and methods a century ago, yet here was an observing mind that analyzed and compared, brooded and reasoned out to certain conclusions. Like all such men, he had not a single track mind. Besides being "an investigator of penetrating imagination," Bright was a genius of varied vocations—writer, collector of engravings, botanist, geologist; yet simple, unprejudiced and truth loving.

It is to the honest, openminded seeker that truth comes. Measure your man by the breadth and depth of his interests. Such men are easy to work with. They are tolerant, ready to listen, but unhurried in accepting or making decisions. They want to see all sides and compare, because they must know the truth, the only thing that concerns them.

They are never politicans looking for the main chance for themselves or their friends. Like all scientific-minded men these seeing men are willing to sacrifice present profit or prestige for great goals, goals others cannot see.

Sir Samuel Wilks, speaking of Richard Bright, said: "He could not theorize and fortunately gave us no doctrines and no views, but he could see, and we are struck with astonishment at his powers of observation."

Men who can see lay the foundations for future research. What leagues might our profession leap forward did more of us cultivate seeing with our eyes and with our hands. Rich mines of truth we perhaps stumble over daily, facts and data which a Richard Bright or an A. T. Still would stop and investigate, observe and study, until they reached some new conclusions of real practical merit.

What are you observing about tissue response? About slowly applied force and slowly released force? About waiting a moment till the tissue and parts are ready to respond and cooperate with your efforts toward correction? About making these corrections only in line with physiological movement? About the purely anatomical relations of parts? About the actual or probable pathology of the segment in hand? About whether this alters the picture and to what degree? And further, to what measure will you change or modify your method of treatment in this case? What are your observations relative to spinal reflexes as an aid to diagnosis and as directing the treatment indicated?

We might continue with a range of like suggestions—the psychology of the case; the environmental influences; the chemistry of the organ, which you can aid by proper intake.

These matters may well demand the busiest doctor's care and consideration. They may well quicken his vision and sensitiveness, and stimulate his understanding. This makes for scientific and professional advancement.

All this is of interest to our research workers. They are looking for data. They want to know what you see, what you have discovered. It is of special interest to Dr. John E. Rogers, too, and his committee on professional development.

Will some unselfish souls gather from hospitals, clinics, sanatoriums or private practice, a fund of data from their experience and observation? Set down and correlate, brood over and analyze, that the decades and centuries may be therapeutically enriched? Anything less than this means serious loss to science.

FOOT AILMENTS AND DIAGNOSIS

What are you doing for your patients troubled with flat-foot and fallen arches? Do you examine a patient's feet when his complaint is lumbago? Do you just treat him for the lumbago?

In many cases you will find that foot troubles cause and aggravate lumbago conditions. Suppose you have given a patient several treatments for lumbago and in a few days he returns complaining that his back aches in the lumbar area again just as badly as before the treatments. You examine him again and find a rotation of the fifth lumbar to right or left, and you make the proper correction, thinking your patient will surely be relieved. But he returns again with the same complaint. If you will examine his feet carefully, in all probability you will find one foot has a fallen arch and the other one a worse fallen arch, or a first, second or third degree flat-foot. At this point you may wonder how you are going to convince your patient that the condition of his feet is causing the lumbago. But you will explain it to him, and give him an idea of how long it will take to overcome it.

If you haven't a postgraduate degree in foot work, what will you do? If you do have these degrees—and you should have them—be sure to examine the feet of every patient complaining of any lumbar disturbance. It takes but five minutes or so to make this examination. Winning out on a stubborn case of lumbago caused by foot disorders will impress your patient and all his friends, for they will surely hear about it, and your practice will increase.

The feet are important for many reasons. They are first to take the weight of the body every morning. No matter what duty you perform daily your feet must advance to take you and bring you back, and at the close of day they are the last to retire. As a rule, too, the feet are the least noticed and considered of any part of the body. Doubtless this is true because they are covered up and maybe cramped up in a case of cowhide.

In a first degree fallen arch the first and second cuneiforms are down with heads of the metatarsal bones rotated laterally, turning the big toe inward. This will not be as prominent as in the second and third degree. You will find also, a callous thickening under the second metatarsal at the anterior transverse arch.

In a second degree fallen arch the first, second and third cuneiforms are down, inferior to normal positions and a thickening in the plantar fascia and tendons with a callus under the anterior transverse arch. This condition affects the posterior transverse and longitudinal arches. The patient complains of pain in the adductor and flexor tendons.

The first thing you will notice in a third degree fallen arch is the great thickening of tissue under the posterior transverse arch. Nature does this to keep the bones on some sort of cushion. Under the anterior transverse arch a large thick pad of callous connective tissue for support will be found. This patient walks on the side of the foot. The first, second and third cuneiforms and the cuboid bones are all in lesion, letting the posterior transverse arch and the longitudinal arch completely down, disturbing the springs in the feet which normally should be there to break the jars and jolts from the body when stepping. If steel arch supports are so valuable for broken down arches, why do they put springs and balloon air-pressure tires on automobiles? This is a good point. If automobiles didn't have springs and air-pressure tires under them, we would prefer to walk. I feel that Nature-Treads are absolutely necessary for the patient with broken down arches. This tread has a spring, not a jolt.

Every graduate osteopath should take one, or better, all of the good courses in foot technic available today. It means a great deal to the field doctor to have foot technic degrees.

C. C. Jackson.

THE CULTURE OF AN IDEA

The centenary of Dr. Still's birth summons us to consider, not only retrospectively, but, more important, our fixity on the knees of the gods.

It is of small avail to venerate a seer if we stop at veneration and do but little in the way of lamp-trimming.

The osteopathic physicians and other disciples of Dr. Still need not the urge for loyalty, but, again, loyalty is not effective unless it is coupled with an intelligent program for development of his idea.

Propaganda naturally falls into two types: the one of enthusiasm, protestations of service and much visioning of the Elysian day when the world is convinced and wooing can cease; the other of a practical nature with a plan of action to be adhered to through a long series of years, hewing to the line all the way. The former is not without its uses, but it can be stewed up at a moment's notice and is not adapted to prosaic treatment.

Every epoch-making idea, in its relation to the public, passes through three stages:

(1) The formative; (2) the persecutive; (3) the indifferent.

In the formative state the author of an idea has a double handicap. He holds the truth with an untried grasp and his first disciples must come from the unimbedded members of society. The result is, with notable exceptions, that the pioneer disciples of every movement are made up of unpractical and perhaps deficient members. Not necessarily deficient intellectually, but ill-fitted to launch a new enterprise. Therefore the first aid is the virility of the idea. It is embryonic life.

If the idea survives and reaches the attention of the world the era of persecution sets in. This is a valuable asset to growth. Persecution prepares the soil for the seed to drop in far more rapidly than any other agency. If the seed has merit it has a chance, although the chance is given by its enemies. But the great value of persecution is in the solidification of the adherents of the movement.

Coming, as we have noted, from all walks of life and being among the less stable part of the community, the pioneers are not well adapted to work together in harmony.

But, assisted by persecution, they present an unbroken front to the common enemy and so long as the hot wind is felt on their faces the movement has all the zeal of a crusade.

Then comes the period of establishment and indifference on the part of the public. This is the most dangerous stage. Dissensions, fault findings and peevishness break out. Schisms, blocs and offshoots are formed. They still cling to the founder, but they part his garments.

It is at this state of development that a policy should be formulated and adhered to unless the necessity for a change is born of experience.

The formulas of such a policy should be restricted to basic principles—just enough in number so that every problem or emergency can be referred to one of these principles and determined from its basic policy. This insures a consistency that cannot exist when questions are decided from the emotion of the moment.

The experience of other similar movements is helpful, both as a guide and warning. Never ask for an unfair advantage. Not alone because this is part of the Golden Rule, but because it is sound business policy. As soon as you demand a special privilege you are giving your opponent the advantage of being persecuted. Moreover, you present your cause with timidity instead of as a challenge.

Never exhibit the arrogance of success. The public is your best trumpeter. There is but one horn and if you use it all the time the public cannot use it.

Don't make an issue of every question that comes up. Most things heal themselves. Eighty-five per cent of patients would get well, anyway. So with grievances. Use the same strategy for both. By adopting the policy of non-resistance you may get a credit you do not deserve, but it will make up for the times you were censured wrongfully.

Make an issue only when you are sure to win. In doubtful cases, let it alone. Don't look at the injury. Look at the remedy. Many cases are *damnum absque injuria.* Let it rest at that. Remember you are fighting for a cause, not the individual. The individual rises with the cause.

Don't play politics. The public is the final judge. Better postpone your victory than do anything that will put you to shame when the judges see you naked.

Dr. Still planted the seed of a great idea. He saw it through the formative period. Persecution is going down with the setting sun. With unlimited patience, those in a position of leadership should guard the growth of this idea so that there will be no departure from the norm established by the eminent founder of osteopathy.

C. E. HERRING.

ELBERT HUBBARD VISITING DR. STILL

Elbert Hubbard made one of his memorable "Little Journeys" to the home of Dr. Andrew Taylor Still. What a world famous layman considered a pleasure, every osteopathic physician should certainly consider both a pleasure and a duty.

ATTEND THE CENTENNIAL CONVENTION AT KIRKSVILLE

August 6-11

Transportation Chairman
DR. H. E. LITTON
K. C. O. S.

General Chairman
E. H. CONNER
Citizens National Bank

Housing Committee Chairman
C. J. BAXTER

Convention Notes

$5,000 FOR ENTERTAINMENT

Kirksville is now preparing to raise $5,000 to spend for entertaining the A. O. A. Convention. There seems to be a sentiment among all Kirksville citizens to make this the biggest and best convention that has ever been held by the osteopathic profession.

The celebration of the 100th anniversary of the birth of our noted fellow townsman, Dr. A. T. Still, swells our hearts with pride; and due to the fact that most of us knew Dr. Still personally and touched elbows with him for many years in our daily walks of life, we remember and revere him as a father and a counsellor as well as a genius and a scientific discoverer.

We wish to extend to every osteopath in the field a cordial and sincere invitation to take part in this celebration and be entertained by the citizens of our city.

E. Conner, Chairman,
Executive Committee.

CONVENTION TRANSPORTATION

For those who plan to travel by railroad, the special rates for the convention have been arranged so that you may come to the Eye, Ear Nose and Throat convention, held the week before the regular convention, and remain for the K. C. O. S. summer postgraduate course.

It seems advisable to urge those coming from the East and Southeast to route through St. Louis. From that point they can secure splendid accommodations for Kirksville via the Wabash. Those who must travel by way of Chicago should purchase tickets routing via Santa Fe to La Plata and thence by Wabash to Kirksville. It is probable that arrangements will be completed with the Santa Fe to operate a special Pullman on their train leaving Chicago at 10:30 in the evening. This train reaches La Plata at 6 o'clock in the morning and the Pullman will be dropped off there. While tickets must be purchased through to Kirksville to secure the special rates, it is probable that this particular train will be met by bus transportation so as to reach Kirksville in time for the morning program. Further announcements on this point will be made at a later date.

For those who wish to travel by automobile, much better roads will be encountered than ever before. One can travel by paved or gravel roads to Kirksville from Kansas City, St. Louis, Hannibal or the Iowa line directly north of Kirksville. Doctors coming from the East may travel over paved roads to either Hannibal or St. Louis and find all-weather roads from those points to Kirksville. Western traffic should route through Kansas City and go from thence to Columbia, Mo., on Number Forty and north from there to Kirksville on Number Sixty-three.

HOUSING ACCOMMODATIONS

We are confident that Kirksville will be able to take care of everyone that may come to the big convention. The new Travellers Hotel has been put in operation since the last A. O. A. convention held here in 1924. The citizens are most willing to offer their homes to the Housing Committee.

The Rotary Convention is to be held in Kirksville on May 3 and 4, and they are confronted by the same housing problem. In order not to create any confusion, our committee has decided not to do any work on the A. O. A. housing matter until the Rotary Convention is out of the way.

We are at present engaged in the active work of making the survey and all applications for accommodations will be attended to soon after the first of May. Letters that are received before that time will be placed on file in the order of their receipt and will be taken care of in the proper order.

I have every confidence that everyone who visits Kirksville during the convention can be comfortably located.

C. J. Baxter, Chairman,
House Committee.

DOCTOR STILL'S ONE HUNDREDTH ANNIVERSARY

Think of it! If Dr. Still had lived he would have been one hundred years old on August 6 of this year, the date on which our American Osteopathic Association is to meet in Kirksville.

Every osteopath on earth should want to attend this meeting and should do so if in his power. We are paying tribute to the memory of the man who made possible the success of our profession. We owe it to him, we owe it to the profession that he gave to the world to hold at Kirksville not only the biggest, but the best and most wonderful osteopathic gathering the world has ever witnessed. Even though we had to take a blanket and sleep on the ground and camp out we should all be there. This will not be necessary. On my trip to Kirksville yesterday I found all the committees have been at work and arrangements have been made to take care of us comfortably as Kirksville has always done when conventions have been held there.

Dr. Riley is getting in shape a program of notable speakers. Dr. Asa Willard, chairman of the committee that has charge of the reunion of the Kirksville and Adair County, Missouri, osteopaths, has some splendid plans. There will be a gathering of those who were with Dr. Still and near him, and all former residents and natives of that community, just for a good time; there will be reminiscences and dancing, in fact he has something worth while to offer all those who attend. Dr. George Laughlin as local chairman of the program is working in conjunction with Dr. Pocock, guaranteeing a feast in the way of osteopathic knowledge and preparation worth while.

In addition, it has been arranged that the convention is to come to Macon Thursday afternoon, August 9. The Still-Hildreth Sanatorium will furnish the eats, genuine barbecued meat, the finest in the land. There will be dancing in the pavilion and a real old-fashioned barn dance in a building over one hundred feet long and more than thirty feet wide. This visit will give those who have never visited the institution an opportunity to know what the profession has at its disposal.

Kirksville is now accessible by automobile in any kind of weather. There are only ten miles of dirt road between Chicago and Kirksville when coming by way of Quincy, Shelbina and Macon to Kirksville. The road is paved most of the way and my judgment is those ten miles will be graveled before convention time. This route by way of Quincy and Macon is over highway No. 36 in Missouri. This highway extends clear across the state and those coming from the west can reach No. 36 at St. Joseph. If the dirt roads are good from Quincy to Kirksville, No. 6 would be the shortest route. Then 63 is paved across the state north and south and passes through Macon and on to Kirksville. All those who wish to come in their own cars will find the roads in Missouri greatly improved over four years ago. With these facts before you there is nothing to prevent all osteopaths from coming to Kirksville for the greatest convention in the history of the profession to celebrate the one-hundredth anniversary of the Old Doctor. Let's plan now and be there.

A. G. Hildreth.

SOCIETY OF DIVISIONAL SECRETARIES

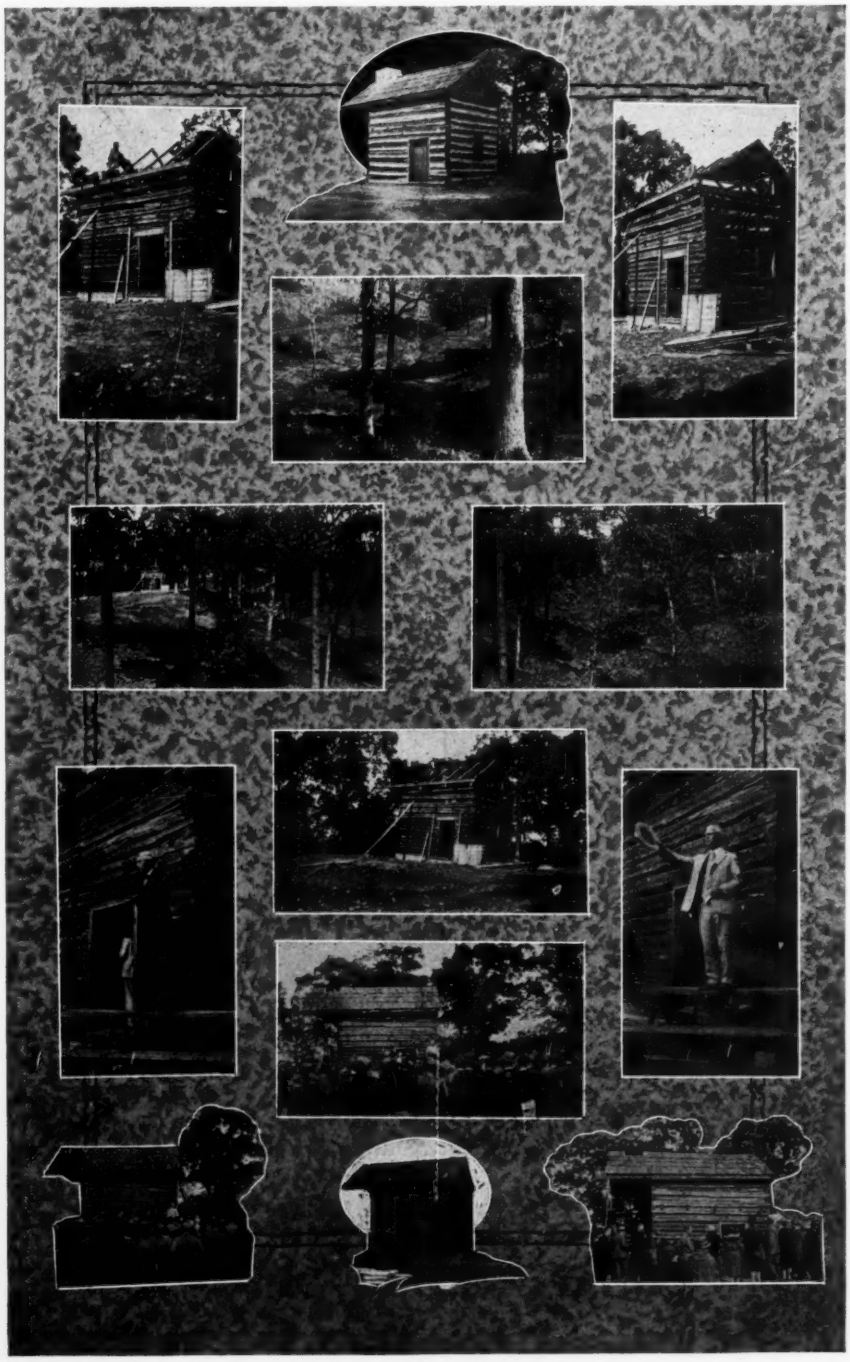
Dr. E. C. Brann of Wichita is planning a series of meetings by this society during the Kirksville Convention. No set program will be announced, everyone being expected to participate in the discussion of secretarial problems.

It is hoped that the secretary of every divisional society will be present. If any secretary cannot attend, he should appoint a delegate from his district to represent him so that the round table discussions will include every section of the country.

The problems of state associations are many and difficult of solution. A series of frank, open discussions is certain to bring out many important ideas and help everybody concerned. Watch for further announcements.

THE LOG CABIN IN WHICH DR. STILL WAS BORN

Dr. George M. Laughlin had it removed from Jonesboro, Va., to a wooded knoll at Kirksville. The pictures show scenes of the taking down, re-erection and opening of the cabin, which will be dedicated at tha Centennial Convention.



Program

HUBERT POCOCK, Chairman

Centennial Convention of the A. O. A.

KIRKSVILLE, AUGUST 6-11

MONDAY

A. T. STILL CONCEPTS.
PHILOSOPHY.

9:00- 9:10—Song—Music.
9:10- 9:15—Invocation.
9:15- 9:30—Address of Welcome . Governor of Missouri
9:30- 9:40—Response . . . . . Chester D. Swope
9:40-10:00—President's Address . . George V. Webster
10:00-10:30—Cause and Effect . . . George M. Laughlin
10:30-11:00—A. T. Still, the Scientist . W. B. Meacham
11:00-11:30—Osteopathic Conquests . . C. W. Johnston
11:30-12:00—Laboratory Proofs . . . . . Louisa Burns

1:00- 2:00—Luncheon . . . . . Program Chairman

2:00- 5:00—Celebration
7:00-10:00—Reception ..... George W. Riley

TUESDAY

A. T. STILL CONCEPTS.
ANATOMY.

7:00- 8:00—Surgery.
8:00-10:00—Sections.
10:00-11:00—Applied Anatomy of Extremities . . . . . Russell R. Peckham
11:00-11:30—Surface Anatomy of Head and Neck . . . . . T. J. Ruddy
11:30-12:00—Applied Anatomy of the Spine, H. V. Halladay

12:00- 2:00—Luncheon.

2:00- 5:00—Celebration.
Evening Entertainment.

WEDNESDAY

A. T. STILL CONCEPTS.
PHYSIOLOGY.

7:00- 8:00—Surgical Clinics.
8:00-10:00—Sections.
10:00-12:00—Program.
10:30-11:00—Physiology of Sympathetic Nervous System . . . . . Leon E. Page
11:00-11:30—Physiology of Cerebrospinal Nervous System . . . . . Edward S. Merrill
11:30-12:00—Physiology of the Endocrine System . . . . . Laura Tweed
12:00-12:30—Rule of the Artery . . . Arthur D. Becker

12:30- 2:00—State, Class and Society Luncheons.

THURSDAY

A. T. STILL CONCEPTS.
IMMUNITY.

7:00- 8:00—Surgical Clinics.
8:00-10:00—Sections.
10:00-10:30—Factors in Immunity . . . . Gervase Flick
10:30-11:00—The Lymphatics and Immunity, C. Earl Miller
11:00-11:30—Dietetic Influence in Immunity . . . . . G. V. Webster
11:30-12:00—Structure and Immunity Harold I. Magoun

FRIDAY

A. T. STILL CONCEPTS.
RESEARCH.

7:00- 8:00—Surgical Clinics.
8:00-10:00—Sections.
10:00-10:30—Path of the Lesion in Relation to Tissue Reactions . . . . . Louisa Burns
10:30-11:00—The Law of the Application of Force. . . . . J. A. MacDonald
11:00-11:30—Recording the Lesion . . . . F. A. Long
11:30-12:00—The Vertebral Lesion . . . Homer Tweed

1:00- 1:30—The Old Doctor's Methods of Investigation . . . . . E. Roscoe Lyda
1:30- 2:00—Researches in Metabolism . . E. H. Green
2:00- 2:30—Research in Scoliosis . . . Beatrice Phillips
2:30- 3:30—A. T. Still Osteopathy—A 30-Year Experience . . . . . Joseph Sullivan
3:30- 4:00—Research in Mental States. J. Ivan Dufur
4:00- 4:30—Heart Studies . . . . . Z. Kinnev
4:30- 5:00—Kidney Studies . . . . . Ralph Baker

SATURDAY

A. T. STILL CONCEPTS.
TECHNIC.

7:00- 8:00—Surgical Clinics.
8:00-12:00—Cervical . . . . . Chester Morris
(30 Minutes each)—
Upper Dorsal . . . Alex. F. McWilliams
Lower Dorsal . . . . . E. Tracy Parker
Lumbar . . . . . Richard N. MacBain
Rib . . . . . Perrin Wilson
Pelvic . . . . . D. L. Clark
Extremities (Knee) . . . John J. O'Connor
Feet . . . . . H. R. Bynum, John M. Hiss

Women's Program

SECTIONS

Eye, Ear, Nose and Throat (4 days) . . . John Peacock
Gynecology (3 days) . . . . . Blanche M. Elfrink
Nerves and Mental (2 days) . . . . . J. Ivan Dufur
Surgery (3 days) . . . . . George M. Laughlin
Technic (3 days) . . . . . Chester Morris
Proctology (3 days) . . . . . Bigsby
X-Ray (2 days) . . . . . Lloyd
Acute Diseases (4 days) . . . . . C. Earl Miller
Art of Practice (3 days) . . . . . Harold I. Magoun
Gastro-Intestinal (3 days) . . . . . Edward M. King
Internist (3 days) . . . . . S. V. Robuck

PINCH HITTERS

Orel Martin, Boston.
E. E. Loose, Findlay, Ohio.
Hugh Conklin, Battle Creek, Mich.
Elmer Detweiler, London, Ont., Can.
Jenette H. Bolles, Denver.
E. O. Millay, Montreal, Can.
Jennie Ryel, Hackensack, N. J.
H. J. Hoyer, Summit, N. J.
Forrester Moore, Hamilton, Ont., Can.
Floyd Moore, Brookline, Mass., "The Modern D.O."
Harold Evers, Lynn, Mass., "Experiences in Technic."
Perrin T. Wilson, Cambridge, Mass., "Acute Practice."
Frank M. Vaughan, Boston, "25 Years' Practice."
Myron Barstow, Boston, "Tight Places."
Geo. J. Conley, Kansas City.
And others.

Department of Professional Affairs

ARTHUR D. BECKER, Chairman
916 Joshua Green Bldg.
Seattle, Wash.

BUREAU OF COLLEGES

D. L. CLARK, Chairman
Denver

AN APPEAL FOR STUDENTS

This is the time of year when we should be especially interested in student recruiting. High school students are soon graduating and their thoughts are turning to the time when they must select their life occupation. This is the opportune time to interest them in the study of osteopathy.

I have written to Dr. Gaddis asking him if we might make the June number of the Osteopathic Magazine a student recruiting number, devoting a portion of its pages to a brief explanation of osteopathy understandable to the layman and a brief exposition of the advantages and opportunities it offers for a professional career.

We should interest as far as possible every group of osteopathic physicians as well as every individual to make a special effort to place as many of these magazines as possible in the hands of high school students; we should furnish speakers to talk on the opportunities offered by osteopathy to as many student bodies as we can. In this way we could reach tens of thousands of students.

This is an obligation which, as a professional body, we have sadly neglected in the past.

Who will do this work if we fail to?

If each one of us will do our part much can be accomplished and no one will be hurt. We owe it to the community in which we live, we owe it to the students, we owe it to our profession, we owe it to our schools and, above all, we owe it to suffering humanity. Let us get behind this movement. Send in appealing articles for this number not later than April 15. And order a large supply to distribute in your locality.

D. L. C.

HOSPITALS AND SANITARIUMS

GEORGE M. LAUGHLIN, Chairman
Kirksville, Mo.

PHILADELPHIA

The Board of Directors of the Osteopathic Hospital of Philadelphia announce receipt of and gratefully acknowledge a check in the amount of $1,000 from Mrs. Camille H. Losee, Westfield, N. J., a gift, in memory of her husband, the late Charles D. Losee, to the hospital for the purpose of furnishing a small ward in the new hospital building. Mr. Losee was the father of Drs. Gordon P. Losee, '17, and Chester D. Losee, '20, both of Westfield, N. J.

Dr. J. Harry Slaugh advises us that Mr. and Mrs. Peter Hagan, 1103 Prospect Avenue, Melrose Park, Pa., are making a donation of $2,500 to the Osteopathic Hospital of Philadelphia. This gift is to be applied to the new college and hospital building fund. Dr. Slaugh states that Mr. and Mrs. Hagan are much interested in osteopathy and plan to contribute further to this hospital.

Two hundred and six persons including doctors, nurses, students, organizations and laymen have subscribed a total of $8,075 annually for five years to the Interest Guarantee Fund of the new College and Hospital buildings. Twenty-four payments have been actually made to this fund in the total amount of $1,851. The goal to be achieved is $9,000 representing 6 per cent interest on $150,000.

MASSACHUSETTS

The public opening of the new Massachusetts Osteopathic Hospital was held Saturday and Sunday, February 25, 26. On these two days over three thousand people inspected this monument to Dr. Andrew Taylor Still, which has been built in Boston for the osteopathic profession and their friends.

Everyone who visited the hospital was delighted with the building and its appointments. In every detail it shows the result of careful study of the problems involved in rendering service to patients, both in its out-patient department and the hospital proper.

The osteopathic clinic department was opened for ambulant cases on Monday, March 5, and a large number of underprivileged patients were there for attention.

The hospital received its first guests in the afternoon of March 5, and on March 8 they were obliged to refuse further admittance because every available bed was occupied.

The hospital corporation has purchased the adjacent property, consisting of a modern fifteen-room house with 10,000 feet of land, and this will be used as a nurses home.

The trustees have appointed Dr. Orel F. Martin director of the hospital.

Dr. Martin reported on March 19 that the hospital is overrun with patients. The staff has to turn them away every day.

History of The Massachusetts Osteopathic Hospital.

A group of osteopathic physicians of greater Boston had an ideal. It was to make the science which had done so much for them and for their patients available to the large group of underprivileged individuals who are dependent on charitable organizations for their health service and who have no institution in Boston where osteopathic service is available. From this ideal has developed the first osteopathic hospital in New England.

Many years ago a few osteopathic physicians began a luncheon group called the Osteopathic Round Table. The problems of the profession were discussed. This group formed an association under the auspices of the Massachusetts Osteopathic Society which applied to the State of Massachusetts for a charter to operate a charitable osteopathic hospital. This charter was issued on April 27, 1923.

During subsequent years, interest in this undertaking was quietly but constantly forwarded by the work of the osteopathic physicians of New England, until sufficient support was obtained to justify the purchasing of land and the erection of suitable buildings thereon.

In January 1927, an acre of land on Evergreen Street just off South Huntington Avenue, in the Jamaica Plain section of Boston, was purchased by the corporation. This land is located in what is known as the "hospital district" of Boston. The site was chosen first, because of its accessibility for clinical patients; second, because of its high elevation, which allows for ample light and sunshine in every room of the building, as well as supplying unlimited fresh air to all patients.

The type of building best suited to render osteopathic service had been carefully studied and plans were prepared by the well-known firm of architects, J. William Beal, Sons.

The initial funds for the erection of this building were obtained from the osteopathic physicians themselves and a small group of interested friends, but now subscriptions and donations are being requested for the completion of the hospital and the maintenance of its work.

The advisory board, who have contributed so much to the success of the project, consists of the following:

Frank D. Brown, treasurer, Warren Institution of Savings; Shirley H. Eldridge, president, Waltham Trust Company; William E. Smith, treasurer, Georgian Cafeteria, Inc.; J. W. Woodward, 74 Fuller Street, Brookline; Frank E. Buxton, president, North End Savings Bank; J. J. Martin, president, Exchange Trust Company; Parker F. Soule, president, L. P. Soule & Son Co.; Franklin T. Miller, 30 Grove Street, Auburndale.

The building has been constructed under the direction of the trustees: Dr. Frank M. Vaughan, vice president; Dr. Perrin T. Wilson, secretary; Dr. Myron B. Barstow, treasurer; Dr. John A. MacDonald; Dr. Orel F. Martin; Dr. Alex F. McWilliams.

Dr. Orel F. Martin has personally supervised the construction and furnishing of the building as chairman of the building committee, comprised of Drs. Frank M. Vaughan, Myron B. Barstow and Orel F. Martin.

TYPE OF SERVICE RENDERED

The hospital will render service to all who apply and will receive and care for the patients of all osteopathic physicians.

The first floor will be devoted to the out-patient department and is so designed that it will serve the people who are clamoring for osteopathic treatment, but unable to afford private service. The work done in this department will fulfill the primary object of this building, namely, to render the highest type of osteopathic service to the thousands who would otherwise be deprived of the benefits of osteopathy.

The second floor will have operating and obstetrical departments, together with x-ray and clinical laboratories.

The third and fourth floors will be devoted exclusively to patients requiring institutional care, and the fourth floor has been especially planned for those cases which require strictly osteopathic management in order that they may avoid the usual hospital annoyances.

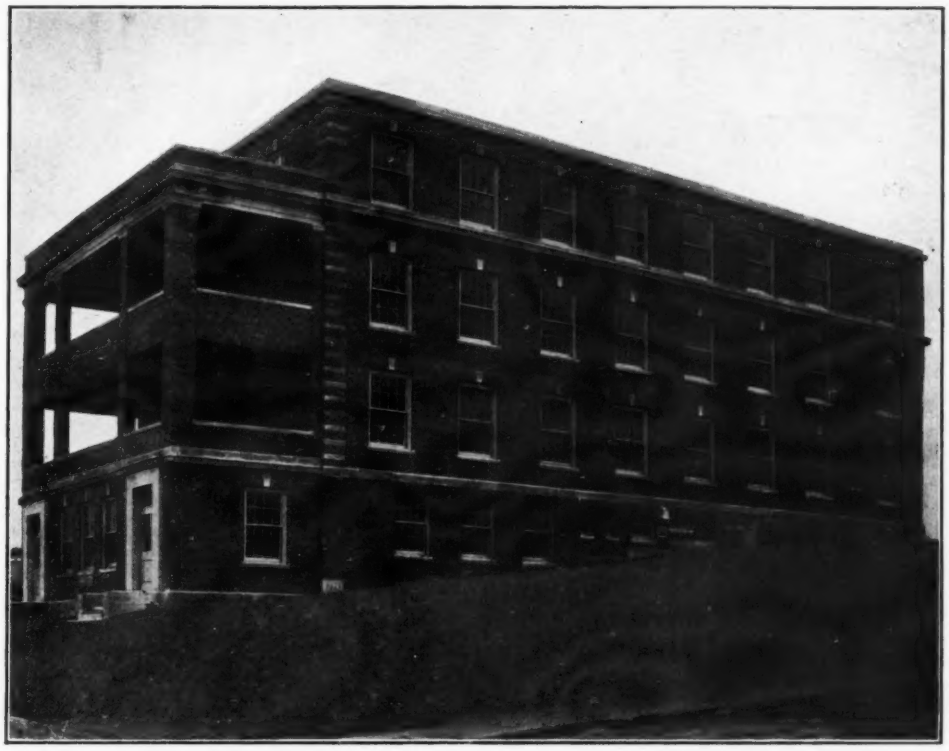
All patients' rooms have extra large windows and wide doors, which permit easy transportation of the patient in bed to the airing balcony on pleasant days. The rooms are provided with especially designed bed lamps, private telephones and radio connections. There are sun porches on each floor.

CONSTRUCTION

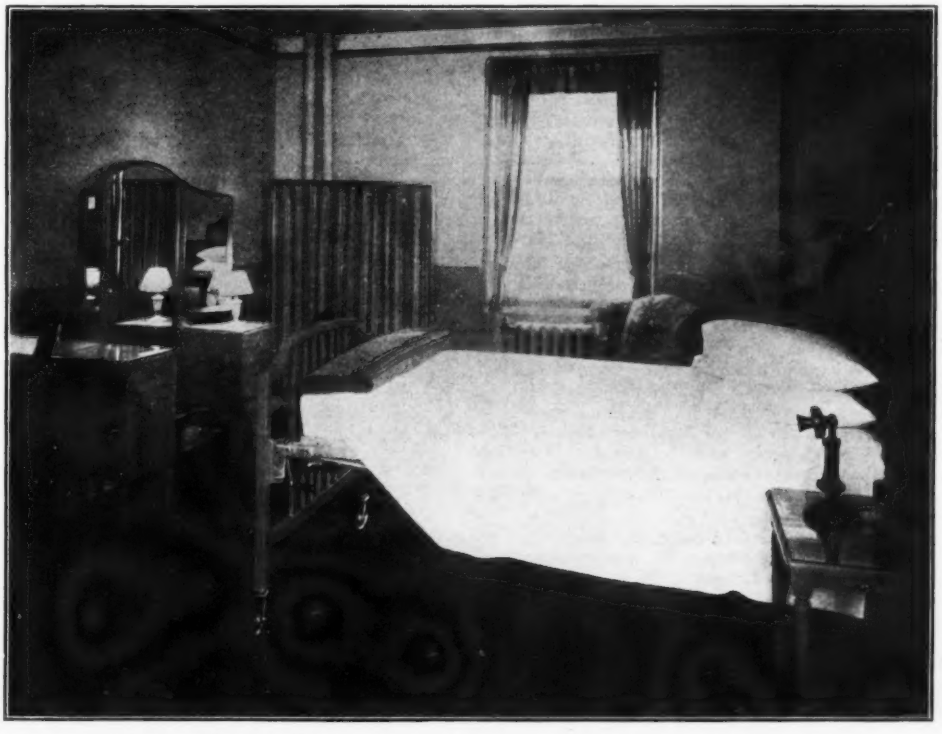
In building this unit, there has been the most unusual and helpful co-operation between all the participating contractors, architect and building committee.

The first unit is now completed. It is of fireproof construction with a water struck antique brick exterior, trimmed with limestone.

The heating will be by the vapor steam system, using



First Completed Unit of the Massachusetts Osteopathic Hospital Building, Boston



Typical Private Room in the Massachusetts Osteopathic Hospital

AN OPERATING ROOM IN THE MASSACHUSETTS OSTEOPATHIC HOSPITAL

gas for fuel. Gas fuel is a distinct innovation in a hospital building and was decided upon after a great deal of study by heating engineers. The fact that gas heat requires no engineer and is free from soot, noise and odors is a great advantage in hospital service.

The Kerner Incinerator cares for the incineration, so that all material which is to be destroyed is handled from the floor on which it accumulates, eliminating the necessity for cartage to the basement or outside.

The floors are of reinforced steel and concrete construction, covered with linoleum. In all patients' rooms an especially designed base to prevent the furniture from coming in contact with the wall has been installed. A sanitary cove base is carried out throughout the entire building, to prevent accumulation of dust. The floors in the operating suite and the reception foyer are terrazzo.

The elevator installation, which is in a separate corridor and entirely enclosed to eliminate any objectionable noise, has been installed by F. S. Payne Company. Tyler doors, which entirely recede into the wall, permitting the easy passage of a bed on and off the elevator are used together with a Tyler car.

Walls are of gypsum block construction with steel door frames.

The building is plastered with California stucco in various tints, trowelled to a very smooth finish. The tints utilized are harmonious and lend themselves extremely well to the room schemes of the decorators, as a Latin finish is used throughout the patients' rooms and corridors.

The hardware is furnished in SKA, a sand blast, dull brass, dark finish, chosen because it never tarnishes, changes color or requires polishing.

The woodwork is finished in natural birch.

The windows are extra large to allow the maximum of sunlight to each room, and have a built in air current deflector in the casing.

The heating, which is by vapor steam system, is so planned that an extra amount of radiation has been supplied to all rooms, all radiators being placed directly underneath the windows.

The plumbing has been so arranged that all parts may be of easy access in case of repair. Fixtures were furnished by the J. L. Mott Iron Works.

The electric wiring is arranged to provide every patient's room with a double switch ceiling fixture which contains both a 75 watt light and a 15 watt green night lamp, plus a bed lamp and outlets for electrical therapeutic appliances. Outlets for radio ear phones are installed, so all patients may have the advantage of radio service.

The latest type of nurses' call system manufactured, is furnished by the Connecticut Telephone and Electric Company.

The building has been equipped throughout, with the exception of kitchen and refrigeration equipment, by the Kny-Scheerer Corporation of New York, with full automatic electric sterilizers which is the most modern type of sterilizing equipment.

The same corporation designed special furniture in colors to harmonize with the building finish. All the decorations and draperies were designed and executed in their interior decorating studio.

BUREAU OF CENSORSHIP

ROBERTA WIMER-FORD, Chairman
Seattle, Wash.

ADVERTISING

Of the matters which have been called to my attention as chairman of the Bureau of Censorship faulty advertising by osteopathic physicians has led. These advertisements were sent in by clipping bureaus. Investigation through correspondence has convinced me that practically all of these errors were due to misunderstanding of ethical points and a lack of knowledge of the principles and psychology of advertising.

It is my firm believe that if proper attention were given in all osteopathic schools, from the freshman year on, to a definite study and instruction in practice building and professional ethics; if these subjects were fully, freely, intelligently discussed and followed by quizzes, examinations and grades, fee splitting, unethical advertising and pathetic failures in trying to practice would decrease markedly. If several of our active, successful doctors were annually invited to appear before the student body

in each of our osteopathic colleges to give practical, illuminating talks and wise counsel, untold benefits would accrue.

Why not try it?

A lecture from the head of the Better Business Bureau would be beneficial, too.

R. W. F.

Department of Public Affairs

JOHN A. MacDONALD, D.O., Chairman
160 Newberry St., Boston

BUREAU OF CLINICS

VICTOR W. PURDY, Chairman
725 Caswell Bldg., Milwaukee

Think!

At the moment of writing this there are, most everywhere, clinics embarking upon the observance of Normal Spine Week. Some part of each day there are hundreds, we might say thousands, who are being examined, while many more are listening to public lectures upon health topics. What a wonderful opportunity this is, not only to give advice and help to the needy, but to voice the principle of right living and the overcoming of perverted function as first practised and taught by our beloved founder and leader, Andrew Taylor Still, a man who knew how to think for himself.

To many this will have been their first experience with a clinic. There were bound to be disappointments. There was lack of interest. Your motives were misconstrued. Only a few took advantage of your proffered help. There was lack of cooperation all around. And so on.

Whatever your experience, you haven't proved anything. Perhaps someone more experienced would have made it go over big, although they are not better qualified as diagnosticians, etc. There is a right way for doing everything, and such an experience as you have just had is going to make it much easier to go on.

If you are satisfied that you owe it to others; that you are capable of giving to others what they most need; that this is for their good; that no selfish motives prompt you; then by all means continue to give two hours twice a week to treating the under-privileged. Notify your patients, friends and all in authority that the days and hours designated are for that purpose and that they should act accordingly.

Even though you have only a few worthy cases to care for, save the time you have set aside for the clinic and the balance not occupied by these patients can be well utilized in study of their cases, thorough reading of your journals, thinking and planning for better ways of getting to those who need you. It will also give you time to write to me.

Remember, that to have a worthwhile clinic requires thought and preparation. A clinic that is going to last beyond the initial blast of enthusiasm must have a foundation upon which to stand. The first material for this foundation must come from your heart. You may say this is sentimentalism. Call it what you wish, a clinic must have right motives to start with. If you think of how it will improve your regular practice, your standing in the community, church or lodge, you have another think coming. It is bad enough when we are taken for what we are not, yet that doesn't amount to much. But when our motives are wrong, it is superlatively bad and we cannot deny our guilt.

So, to build aright, be right yourself. Then think out each step in advance. Get the facts from those who have had experience. Ignore those who have failed and have stopped there, for they haven't proved anything, either. Put down in black and white each step and problem as you think of them. Allow your thoughts thus expressed to "age a bit," and then see if they sound logical. Take a week or a month to develop these paper beginnings. If your interest wanes, it is better that it should at this stage than after you make your bow to the public.

Our idea is not to make clinic formation hard. If you are the right man to run a clinic it will not be hard. What we want is for you to think before you go ahead in any way at all. Remember, your success or failure is ours also. That is why we take a bit of our time from our work and multitudinous duties to help you to succeed. The officers of the American Osteopathic Association are ready and willing to serve you; that is why your representatives selected them. Besides these, every practicing osteopathic physician is ready to back any worthy efforts you make, but it is paramount that you think.

The following appeared in the Scottsbluff, Nebraska, paper:

> A meeting of the North Platte Valley Osteopathic association was held here in the offices of Dr. H. I. Magoun, Sunday, at which time plans were made for the observation of "Normal Spine Week," March 18 to 24. It was determined to make an effort at securing the services of Dr. Jenette H. Bolles of Denver, who conducted the clinic successfully last summer during the meeting of the state association here, and who spends much of her time in such work. An answer to the association invitation was received today by Dr. Magoun, stating that she would be able to come.
>
> "Normal Spine Week" is regularly observed over the country by osteopathic physicians and free clinics are held at that time to enable parents to have their children receive, without charge, the benefit of skilled observers along this line. Children from five to fifteen are to be examined, as this is the school age when most curvatures and other spinal abnormalities originate. A general physical examination will not be given at this time, as was the case last summer since time would not allow and it is the purpose of this week to place emphasis upon the importance of the spine.
>
> Scottsbluff and Gering are to have the benefit of Dr. Bolles' advice and counsel on Friday afternoon, March 23. Examination is to be by appointment only and reservations may be made by calling Dr. Magoun's office at any time. Mitchell district is to have a clinic in the offices of Dr. W. T. Williamson on Saturday morning and reservations should be made with him for that date, March 24. Saturday afternoon from two o'clock on an opportunity will be given children in and about Torrington in the offices of Dr. G. R. Hollman. He is receiving reservations at this time also.

Dr. R. V. Gladieux, secretary of the Western Branch, Michigan Association of Osteopathic Physicians and Surgeons, states that they have appointed a committee to formulate plans for a permanent osteopathic clinic at Grand Rapids.

STATE CHAIRMEN

Each state executive has been requested to appoint a state chairman of clinics. So far the following have been named:

Arkansas: W. B. Farris, 302 Merchants National Bank Building, Fort Smith.

Colorado: F. F. Woodruff, 308 Steele Building, Denver.

Georgia: Susan R. Bottenfield, 533 Washington Street, S.W., Atlanta.

Illinois: R. N. MacBain, 25 E. Washington Street, Chicago.

Indiana: Julia Fogarty, 532 Pine Street, Michigan City.

Iowa: R. W. Shultz, 11½ East State Street, Mason City.

Kentucky: L. E. McCurdy, 411 W. Chestnut Street, Louisville.

Maine: Ruth Emery, 211 State Street, Portland.

Massachusetts: Dorothy Sidebottom, 30 Huntington Avenue, Boston.

Minnesota: Frank F. Graham, 396 Choate Building, Winona.

North Carolina: W. J. Hughes, 203 Realty Building, Winston-Salem.

Ohio: P. E. Roscoe, 1001 Huron Road, Cleveland.

Pennsylvania: Wm. S. Nicholl, 4909 Frankford Avenue, Philadelphia.

Tennessee: G. W. Stevenson, Bell Building, Springfield.

These men were appointed for a purpose. As to whether it is worth while depends upon what is accomplished.

This will depend upon—First, their ability to interest you in clinics; second, your prompt acknowledgement of all communications they send you. If the subject of clinics does not interest you, tell them so. That will at least be a reaction. Where there is no reaction there is death. Don't be a dead one.

VICTOR W. PURDY.

EAST BAY CLINIC, OAKLAND, CALIF.

Normal Spine Week, March 19-24, was observed by East Bay Osteopathic Clinic, 3630 Telegraph Avenue, Oakland, in conjunction with the program being observed throughtout the nation.

During the entire week, from 10 A. M. to 4 P. M., special free clinics were held by specialists, on spinal posture, spinal curvature and spinal aches and pains and their associated diseases.

On Saturday at 2 P. M. there was a contest at which an award was to be made for the most perfect spine examined.

Among the specialists composing the staff of examiners for the week were—Drs. Edgar S. Comstock, Lillian G. Harris, E. I. Kushner, Irma Moon, J. R. Morris, Roger Peters, Ernest Pape, H. E. Penland, Paul Theobald and G. M. Peckham.

BUREAU OF PUBLIC HEALTH AND EDUCATION

WARREN B. DAVIS, Chairman
Long Beach, Calif.

Some weeks ago we asked Dr. Hulburt of the Central office to write to the public libraries of twenty of the large cities, preferably where past presidents of the A. O. A. live, asking them what literature they had on osteopathy.

Librarians are surely among the best educated people and the best posted on current subjects of any class. Yet from the nineteen replies received it is very evident several of them have no conception of osteopathy. For instance, the librarian of San Francisco listed Hazzard's Practice and then the authors and names of five books on Massage, and also stated that they do not receive the OSTEOPATHIC MAGAZINE. Is it any wonder that osteopathy is not very well known in that city?

The librarian at Denver listed Dr. Andrew A. Gour's "Therapeutics of Activity," Dr. A. T. Still's "Osteopathy, Research and Practice" and Walch's "Cures." And this library does not receive the OSTEOPATHIC MAGAZINE.

In Minneapolis and St. Louis Fishbein's "Medical Follies" was listed among books on osteopathy. Shades of Jerusalem! What next?

Eighty-five per cent of these libraries do not receive the OSTEOPATHIC MAGAZINE, and the other fifteen per cent, having from ten to twenty branches, receive only one copy.

All of which goes to prove that our profession is less than ten per cent efficient in using its best and cheapest opportunity of educating the public on the merits of osteopathy.

When you want to study or investigate a certain subject you go to your public library and ask the reference clerk in charge what the library has on that particular subject. The same with intelligent people who want to investigate osteopathy. Would such an inquirer in your public library be given a copy of "Medical Follies" or some work on massage? Judging by these nineteen replies from librarians in our largest cities this would happen in twenty-five per cent of the public libraries.

It's a shame and disgrace to osteopathy, but the fact remains, and the only way we have of correcting this condition is through our local osteopathic societies. The librarians are more than willing to receive our osteopathic books and regular copies of the OSTEOPATHIC MAGAZINE, because there is a call for such literature from the public.

Just one interested, live D.O. in each local society is all that we need to put this library idea into practice. Will *you* bring the subject up at the next meeting of your society? Let the president appoint a library committee of one or more, with power to act in purchasing the necessary osteopathic books and subscribing to the O.M. It will mean so much to osteopathy and be very little expense to each society.

W. B. D.

NATIONAL AFFAIRS COMMITTEE

C. B. ATZEN, Chairman
408 Omaha National Bank Bldg., Omaha, Neb.

STATE OF WASHINGTON

We are in receipt of a letter from Dr. C. B. Utterback, secretary of the Washington Osteopathic Association, under date of February 12, 1928, wherein he states that six osteopathic physicians took the Basic Science examination in January and that five of them passed; that two chiropractors took the examination and one passed.

This is quite a different report from that mentioned in a former article.

MICHIGAN

A few days ago a new osteopathic publication, the *Michigan Journal of Osteopathic Medicine and Surgery,* arrived at our desk.

This journal is published monthly by the Michigan Association of Osteopathic Physicians and Surgeons. It contains numerous interesting items from the state of Michigan. One item in particular referring to narcotic rights—tried in the Federal Court of Detroit last July and decided in favor of the osteopathic profession, is important to the profession. This case was appealed by the prohibition director, Doran, at Washington, to the Circuit Court of Appeals at Cincinnati, Ohio, whither it is now pending.

IDAHO

The Supreme Court of the State of Idaho has refused a rehearing requested by medical men of the state, on the hospital standardization litigation. This opens the county hospitals to osteopathic practitioners in the state of Idaho and ends the effort on the part of the medical profession to standardize public hospitals in that state.

DISTRICT OF COLUMBIA

An editorial in the March 17, 1928, *Jour. Am. Med. Assn.* voices strong opposition to the enactment of S. F. No. 3592 by Copeland: A new composite bill to regulate the healing art in the District of Columbia.

S. F. No. 3592 is a substitute bill for S. F. No. 3107; this latter bill contained some ambiguous phrases.

The opposition by the American Medical Association editorial to the bill is on the ground that the provisions make it possible for members of the osteopathic profession to serve as surgeons-general of the Army, Navy and Public Health Service, because the osteopathic profession is given equal rank with the medical profession.

A further objection is voiced against a paragraph in this bill dealing with drugless healers.

GENERAL

A number of complaints have repeatedly come to Attorney Herring from different parts of the country, asking for assistance in securing justice and compensation for services rendered to employees of the government, as well as service to employees of corporations, all of which have been duly attended to, but up to this writing no favorable results have been secured.

C. B. A.

THE O.M. CIRCULATION
is over the 100,000 mark
President Webster says:
"MAKE IT 200,000
THIS CENTENNIAL YEAR"

Problems of the Profession

QUESTIONS AND ANSWERS ON FOOT TROUBLES

Conducted by John Martin Hiss, D.O.

Question: What causes pains under the heels? I have seen a lot of customers complaining of this trouble, and I have been able to do but very little good with shoes. B. J. C.

Answer: This usually indicates broken arches and muscle strain, the pain being felt at the attachment of the muscle to the heel bone where an inflammation is set up. Bursitis may be another cause of heel pain, which can be relieved by hot antiphlogistine packs at night, and by inserting a piece of rubber sponge in the heel of the shoe, and walking on that. A spur projecting forward from the heel bone often results from the above mentioned inflammations. Spurs are often removed by surgeons, which does very little good, as the cause has not been eliminated. Unless a spur of bone points straight downward from the heel bone, I would not recommend its removal.

Question: Do you know of a good remedy for bad odor of the feet? D. A. B.

Answer: Bathe feet in very weak solution of lysol, about four drops to the quart. Then keep feet powdered with boracic acid for two weeks.

Question: I have noticed that arch trouble often comes on after an illness or confinement to bed. Why is this? M. O. G.

Answer: It is not uncommon for patients to have foot trouble dating from an acute illness, operation or long rest. This prolonged inactivity causes a weakening of the muscles all over the body. As the feet do more work for their size than any other part of the body, this general muscular weakness will be felt more there, and will allow the arches to go over on a strain. Thus impending arch trouble is excited into active symptoms. So the illness is merely an incidental factor that brings on the symptoms in a foot that previously had been thrown out of line by poor shoes.

Question: Do knee troubles have any relation to broken arches? E. H. K.

Answer: Yes. With the feet out of line, the center of weight bearing up the leg is moved inward, away from the center of the ankle and knee joints. This causes unequal stress on the joint ligaments, and will make the ankle and knee stiff and painful.

Question: Has the metatarsal "button" commonly built into shoes for metatarsal trouble any real value? O. A. M.

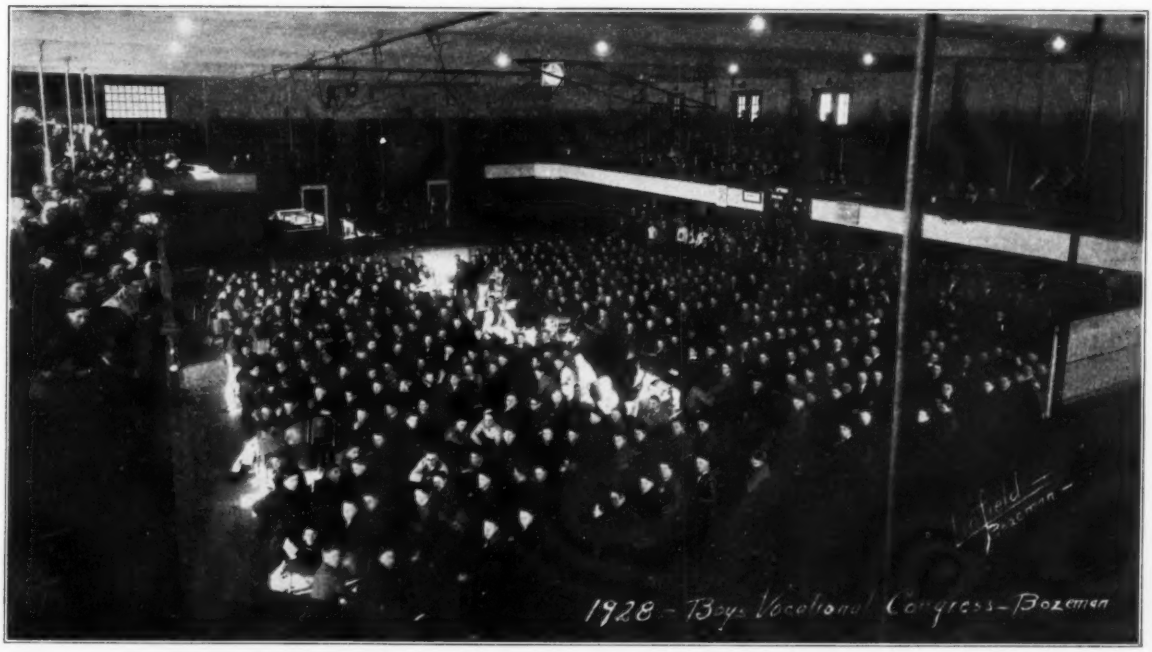
Answer: Yes. Any elevation behind the metatarsal heads will aid in the distribution of the load across the ball. However, it is erroneous to believe that they raise metatarsals, because metatarsals do not drop, as is the common conception. The most important effects are due to the hollowing out of the last, which permits the insole to be lasted up into the arch better than if a hump were left at the break of the last.

Question: I would appreciate an explanation of the common condition called Morton's toe. F. H. P.

Answer: This is a form of neuritis, due usually to mechanical pressure on the nerves to the fourth toe. Sprains and twists of the ankle usually result in a dropping of the outer arch particularly the cuboid bone which is the common cause of the pressure.

Question: Is there any treatment for ingrown toenails, aside from operation? F. W. O.

Answer: Ingrown nails are caused by trimming the corners of the nails into the flesh, as well as pressure from ill-fitting shoes. Always trim toe nails straight across, leaving the corners of the nails protruding beyond the flesh. If the nail is cutting into the skin, separate the nail from the flesh with a small blunt *sterile* instrument, and insert a bit of cotton, soaked in a *two per cent silver nitrate solution*, beneath the edge of the nail. This will guide the nail out and prevent its growing into the soft tissue. Free



YOUNG AMERICANS HEAR ABOUT OSTEOPATHY AS A VOCATION

This splendid audience of boys—1,200 to 1,500 of them—at the Vocational Conference at Bozeman, Mont., listened attentively to Dr. C. B. Atzen on February 1, when he spoke on Osteopathy as a Vocation. For several years osteopathy has had a place on the annual Conference program.

use of *tincture of iodine* will prevent infection. Severe cases require a minor operation under local anesthesia.

Question: Can you tell me the cause and cure of water blisters and itching on the soles of the feet? D. P.

Answer: There is a form of ringworm, due to infection by parasites. The following prescription usually relieves this condition:

Acidi salicylici .....Grs. XXX
Acidi benzoici .....Dm. I
Petrolati .....Oz. I
Sig. Apply locally morning and evening.

American College of Osteopathic Surgeons

OREL F. MARTIN, D.O., Publicity Director
464 Commonwealth Ave., Boston

CLINIC OF DR. ALBERT COLLOM JOHNSON
RADICAL AMPUTATION OF THE BREAST
(Stewart Incision)

This patient is forty-three years of age. She has never had children. About three weeks ago she discovered a lump the size of a small walnut in the upper-outer quadrant of the left breast.

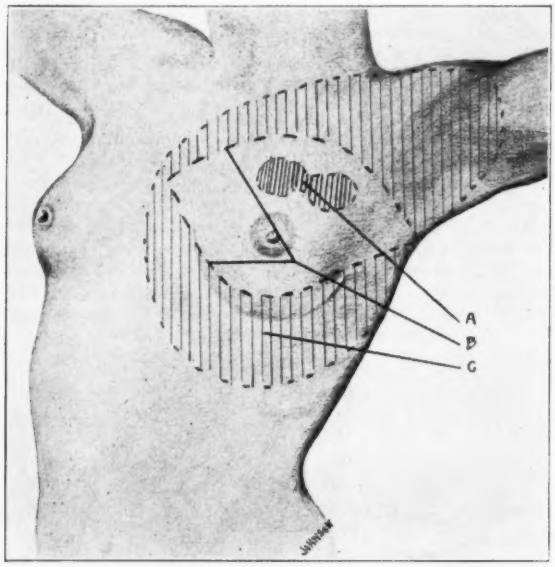


Fig. 1. The shaded area "A" represents the position of the double tumor. "B" represents the horizontal oval incision of Stewart. "C" is the extent to which the skin may be undercut.

Three days ago she came into the clinic to report it.

Examination disclosed *two* masses the size of small walnuts in the location mentioned. The growths are hard, smooth and freely movable. They feel as if they might be attached to each other, but there is no evidence of adhesion to either skin or chest wall. The axilla is negative; the nipple is normal.

The fact that the patient has two tumors makes us think they may be cystic in nature. Cystic tumors of the breast are often quite hard to the touch which adds to the difficulty in making a diagnosis.

We advised immediate surgical treatment, and explained why delay might be dangerous. The patient was well aware of the dangers even before we explained them to her.

OPERATION

The arm, shoulder and chest have been shaved, painted with iodine and draped with sterile coverings.

As we suspect these tumors to be of a cystic nature, we shall make an attempt to aspirate them before deciding just what operation to perform.

The needle is of small caliber and readily penetrates the lateral mass. Several centimeters of a smoky fluid flow into the syringe.

Cutting down upon the mass we discover a blue tissue bulging into the wound. This is evidently the "blue-dome" cyst described by Bloodgood. It is considered benign. Through the same incision we cut down upon the other mass. It is of the "blue-dome" variety also.

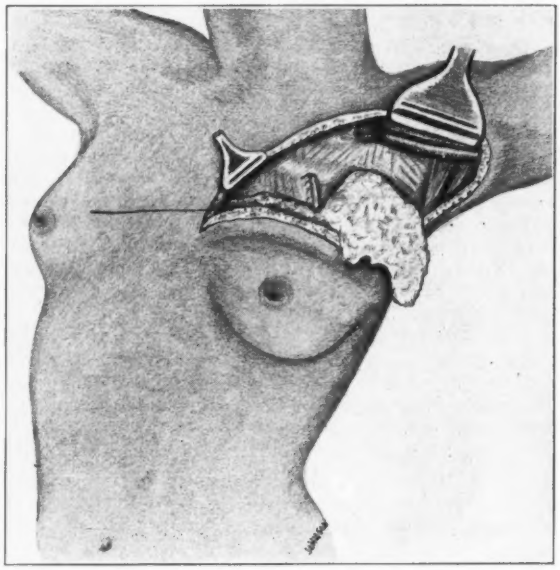


Fig. 2. The upper skin incision has been made. The skin has been undercut to beyond the hair space in the axilla. The insertions of both pectoral muscles have been cut. The fat and lymphatic tissue have been turned down out of the axilla.

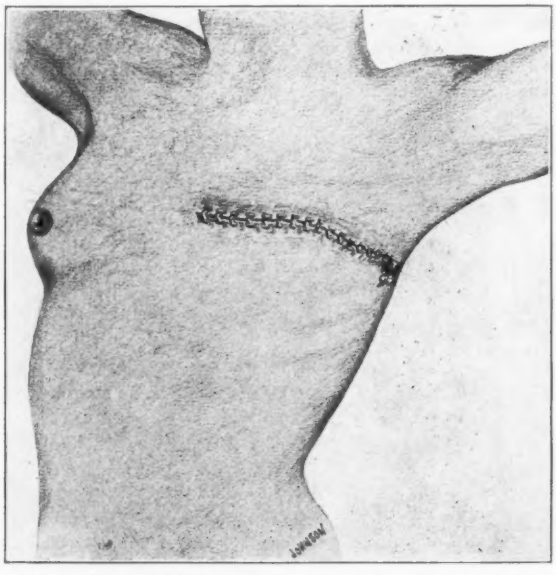


Fig. 3. The finished operation. Small tube drain from axilla to outer end of incision. Drain is removed after 24 to 48 hours.

But—as we try to dissect around these tumors we find that we have some solid tissue to deal with. The mass does not separate from the breast tissue as it should. Cutting into the solid tissue, we find it tough and gritty. It appears to be a new growth rather than a deposit of inflammatory tissue.

This brings us to the ever-occurring surgical problem —shall we do a radical amputation or shall we not?

In most cases the problem is easily solved if the rule—"when in doubt, amputate" is followed. In this case we shall proceed to follow this rule. We would rather sacrifice an innocent breast than see metastasis develop from a neglected one.

We thoroughly bathe the incised tissue with iodine, close it with stitches, and lay aside all instruments that have been used. We also thoroughly cleanse our gloves with alcohol.

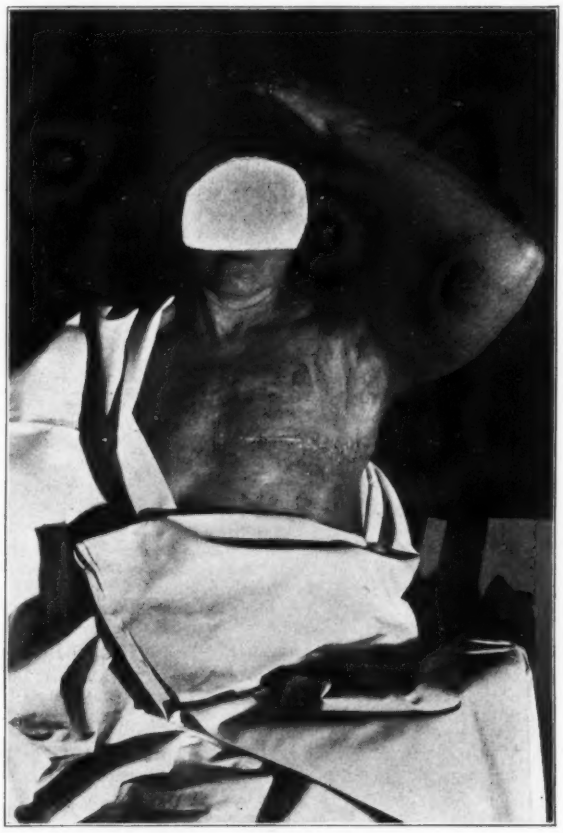


Fig. 4. Photograph of the patient taken on the eighteenth day after operation. Notice the free motion in the arm, due to the fact that it was not bound to the chest following operation. The patient may wear a low-neck dress.

The Stewart incision, which we shall use in this case, was described by Dr. Francis T. Stewart before the American Surgical Association at Rochester, Minn., in 1915.

This particular incision gives about as good exposure as any other incision, and leaves a scar that is not so disfiguring. See Figure 4. We think also, that the healing in the axilla is better when the Stewart incision is used.

The upper arm of the incision begins at the sternum, extends up and across the upper part of the breast, well above the location of the tumor masses; and then slightly downward and outward to the mid-axillary line. The lower arm of the incision will not be made until after the axilla has been cleaned out.

We begin the separation of the upper skin flap. Much of the subcutaneous fat is left adhering to the breast, leaving only sufficient subcutaneous tissue to insure a good blood supply to the skin. We rapidly undermine the skin with a sharp knife, quickly coming to the lower border of the clavicle. Then we work out upon the shoulder to beyond the hair space in the axilla. This uncovers the tendon of the pectoralis major muscle.

The shaded area in Figure 1 shows the area of skin undercut.

We hook a finger under the tendon of the pectoralis major and cut the tendon with the knife. The muscle is detached from the deltoid and laid back, this exposes the pectoralis minor. A finger is pushed under this muscle which is then cut from its attachment to the coracoid process. With these two muscles out of the way, we find the axilla with its fascial covering readily accessible. The fascia is incised parallel to the underlying vessels and nerves, which allows the fatty tissue to bulge out. This fatty tissue, which includes the lymphatic vessels and glands of the axilla, is stripped back toward the breast, using the gauze covered finger and knife. Branches of the axillary vessels are clamped, cut and tied off.

As we finish clearing the axilla, the throbbing artery and the large vein are plainly visible. The vein is as large as the little finger.

From now on the work moves along rapidly. The breast, with the muscles and axillary fat, is held away from the ribs, and the tissues are rapidly cut away. Bleeding points are caught with clamps.

The lower arm of the Stewart incision is now made; the lower skin flap is undermined, and all the breast and accompanying tissues are removed in one mass.

Clamps holding cut vessels are tied off with No. 1 plain gut.

We carefully draw the edges of the skin together with the aid of clamps to see just how much tension is required to close the wound. The tension is a little too great in the lower-outer area, and so we do a little more undermining.

We shall not drive a needle through the skin. This in the fashion nowadays, and it guards against needless recurrences of the tumor in the needle punctures in case the tumor proves malignant. We close the wound with metal clips, placing a split rubber drain to the axilla, having it protrude at the outer end of the wound. The metal clips are started at each end of the incision and are placed close together. We start at both ends so that if there is any plastic work required on account of puckering, it may be done at the center of the wound.

The undermined area of skin is covered with dressings, and a little pressure will be exerted upon these dressings so that no empty spaces will be left for the collection of serum. The arm will not be fastened to the side, but will be left freely movable. In fact, the patient will be encouraged to use her arm from the first. Within two weeks we shall expect this woman to be able to comb her hair with the left hand.

The drain will be removed at the end of twenty-four or thirty-six hours. Half the clips will be removed on the fifth day, and the balance about the tenth.

PATHOLOGICAL REPORT

Section shows marked fibrosis throughout. Surrounding some of the glandular areas are infiltrating round cells. No evidence of malignancy in this section.

Section of axillary lymphnode shows no evidence of tumor invasion.

REMARKS

From the laboratory report, we feel that the patient has a hundred per cent chance to obtain a cure. From the gross appearance of the tumor at the time of operation, we are of the opinion that we were wholly justified in doing a radical amputation.

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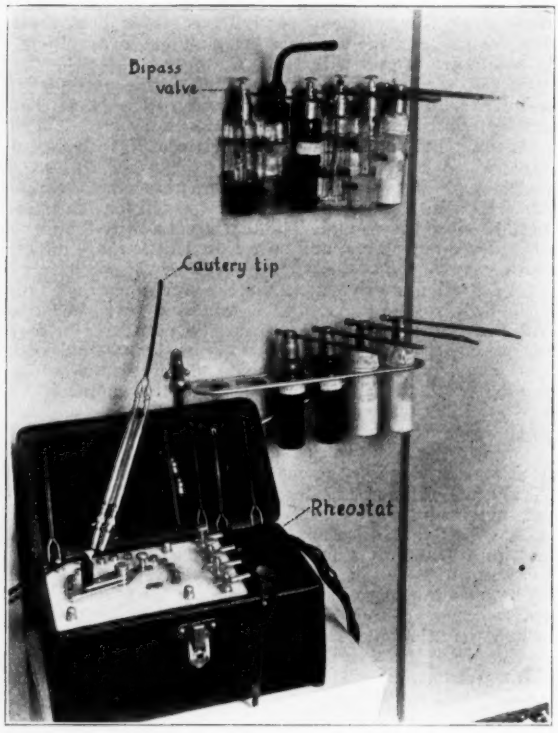
In considering any problem it is necessary to at least attempt a thorough survey of its ramifications. Physiologists have divided, for purposes of description, the human body into numerous systems—visibly, the nervous system, the digestive system, the tegementary system, the endocrine system, the genito-urinary system, the osseous system, the cardiovascular system, the respiratory system, etc. As a matter of fact, it requires all of them to make one human body, and any disturbance in any one of these systems must be reflected to all. The cervix has few sensory nerves, however, the sympathetic and parasympathetic enervations of the cervix are very pronounced,



Office Equipment for Electrotherapy

therefore, irritation of the cervix may produce profound reflex symptoms before the patient is conscious of any local disturbance. Erosions of the cervix are very common and may be induced by slight lacerations, systemic infections, by local infections and by disturbances in body chemistry induced by nutritional imbalance, kidney insufficiency and other disease processes.

Erosions of the cervix are the forerunners of cystic degeneration and of various tumor formations, such as polypi, fibroid tumors and malignant growths. In making pelvic examinations, in fact in making general examinations, all of the structures of the pelvic outlet should be carefully considered—the clitoris, the prepuce, labia minora, the urethra, Skene's ducts, the vaginal orifice, Bartholin's glands, the cervix, and of utmost importance, the rectum. A study of these organs and tissues is necessary in order that we may have a proper perspective of the various systems mentioned above.

Irritation of the cervix or other orificial structures reflexly produces muscle contraction or muscle irritation in two adjacent areas. As per Head's law, the sympathetic supply is derived partially from the 1st, 2nd, 3rd and 4th lumbar segments; the parasympathetic supply is from the 3rd, 4th and 5th sacro; thus directly we may have involved lumbar lesions, sacro-iliac lesions and severe muscle aches and pains not definitely connected with body irregularities. Further than this, especially through the sacral segments of the parasympathetics we have reflex involvement directed to the 3rd nerve, thus involving the structure about the eye by way of the 7th and 9th nerves, involving such structures as are supplied by the sphenopalatine ganglion, the submaxillary ganglion, and the otic ganglion by way of the vagus supplying, to some degree, most of the thoracic and abdominal viscera.

If we consider our problem from this standpoint, many otherwise obscure symptoms may readily be explained, such as occipital headache, visual disturbances, ache across the top of the head, erratic appetite, nervous indigestion (for most of the so-called functional disturbances of the digestive system occur as a result of irritation over the parasympathetics).

It would require a large volume to consider in detail all of the nerve hook-ups so briefly mentioned here: It is necessary, however, in considering this subject to mention a few of the possibilities such as irritations.

Treatment applied in diseases of the cervix varies with individual practitioners. Surgeons wish to inaugurate some surgical intervention, gynecologists who are not surgeons employ various antiseptic and tampon methods. I have known of osteopaths attempting to relieve patients of large retention cysts of the cervix by adjusting lumbar and sacro lesions. Physiotherapists use various electrical modalities. All of these have their indications and it is certainly not in keeping with the perspective in this article to omit any one of the methods that may be indicated.

My own experience has been that where erosions, polypi, and cystic degeneration exist, local treatment is of great importance. Not only must the dietetic, hygienic and employment phases of the individual be adjusted, but the local lesions must be eliminated. In addition to the methods that have been suggested, we have found that actual cautery will solve the problem.

In hundreds of these cases that have been struggling along for months and even years, suffering some degree of invalidism, the small platinum loop cautery, controlled by a rheostat so that varying intensities of heat may be applied is used. The cervix to the internal os is dilated by the use of a jet of compressed air (15 to 20 lbs. to the square inch), enabling one to visualize the entire cervical canal.

Nearly all cases of erosion show numerous small polypi projecting into the cervical canal. These should be eradicated by cauterizing them, not only on the surface, but all the way through to their basement membrane attachment. In other words deep cauterization will give much more satisfactory results than any surface cauterizing that may be employed. The polypi should be grasped with a pair of forceps and burned free from their attachments at the very base, and cysts, even though small, should be penetrated by the use of a red hot or white hot platinum loop and the bottoms of these cysts entirely destroyed.

Beginners in this sort of therapy are more likely to under-cauterize than to over-cauterize. I have not seen one burned too deeply. After cauterizing all of the apparent cysts, a mild antiseptic solution may be sprayed into the cervix and vaginal orifice. It is best always to spray the antiseptic solution in with considerable force. A boroglycerine tampon should then be applied to relieve congestion or swelling following the application of the cautery. The patient should be treated once or twice a week until all of the tissue that has been destroyed has sloughed off. Sometimes slight hemorrhage follows a day or two after the application of this method, but I have never seen one become alarming.

In from four to six weeks after a thorough cauterization, the tissues will be healed, and unless cysts have come from considerable depth, no further work is likely to be necessary. In prolonged and aggravated cases, however, it is not unusual to find one cyst buried beneath another, in some cases involving the entire cervix, and in two cases involving the entire uterus. Here, the body of the uterus itself has undergone cystic degeneration, and it has been my policy to remove the uterus surgically. If the cautery is used in these cases the abdomen should be opened and the cautery applied with sufficient heat to coagulate, but

not carbonize the tissues. We have had numerous cases that have been under treatment for years by all of the other methods, that have responded in a very short time as a result of the vigorous cautery methods, and I hope that all osteopathic gynecologists will use the method suggested in conjunction with a compressed air spray.

In cases of chronic cervicitis, endocervicitis, cystic degeneration of the cervix, and cervical polypi, indications for the use of radium, Roentgen ray and surgery would require special consideration.

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Ear, Nose, Throat and Eye

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JEROME M. WATTERS, Chairman
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CHRONIC CATARRHAL OTITIS MEDIA

WILLIAM OTIS GALBREATH, D.O.

In order to treat chronic catarrhal otitis media successfully, first of all, it is necessary to recognize the etiology of the disease and also to visualize the pathology within the middle ear in any particular case.

If the physician will firmly fasten in his mind the fact that the majority of cases of catarrhal deafness are due to some underlying general condition, he will understand that, in many of these conditions, he cannot hope for an improvement unless these causes are accurately diagnosed and treated, along with the local work.

Middle ear deafness is often due to one or more of the following abnormalities: spinal lesions, toxic conditions arising from different sources and located in any portion of the body, structural lesions in the nasal chambers, adenoids and diseased tonsils. The foregoing list of causes portrays clearly the need for the hearty cooperation of such specialists as the roentgenologist, the pathologist, the neurologist, the gastroenterologist, the bacteriologist, the dentist, and others, if the etiology is to be determined in many aural diseases.

It is not difficult to visualize the pathology of chronic catarrhal otitis media when it is realized that the mucosa of the middle ear tract is continuous from the pharyngeal orifice of the eustachian tube to all parts of the middle ear, including the mastoid process of the temporal bone, and that middle ear disease is in almost every instance an extension of a diseased process in the nasopharynx. Here, as in inflammations of the mucous membrane which lines the nose and throat, the disease develops progressively and may be called turgescent, hypertrophic, hyperplastic and atrophic in its various stages. At all events, one stage gradually merges into the other. At the beginning the lining mucosa is intermittently engorged and turgescent and closes the lumen of the eustachian tube. The air in the middle ear cavity becomes absorbed, causing negative pressure and a retraction of the drumhead. Subsequently there is a more permanent thickening of the mucosa, a true enlargement of the cells—hypertrophy. Finally there results either a real overgrowth of tissue, an actual increase in the number of cells—hyperplasia, or the membrane may become atrophic with its sclerotic changes in the mucous membrane.

It may be of interest to state that in chronic catarrhal otitis media, during the stages of turgescence and hypertrophy, ventilation of the middle ear by any of the various methods of inflation will cause a very definite temporary improvement in the hearing. This fact, while at the moment very encouraging to the patient, is really of clinical importance only as a diagnostic method. Furthermore, by way of warning, it may not be untimely to say that neither the patient nor the general practitioner should be misled by this temporary result when the ventilation of the middle ear is accomplished by using some unusual and somewhat spectatcular method of inflation such as inserting the finger into the cartilaginous portion of the eustachian tube—"finger surgery," which is merely another way of permitting air to enter the tympanic cavity.

The methods of inflation which are in use by osteopathic specialists and which all attain the same results, namely, the temporary improvement in hearing in a given case, are: (1) ventilation by the eustachian catheter; (2) by the indirect Politzer method; (3) by the cotton wound applicator, saturated with some solution such as adrenalin chloride, and inserted into the cartilaginous portion of the tube; (4) by the method of inserting the index finger underneath the cartilaginous plate of the eustachian tube and in that way permitting the air to enter the middle ear cavity; (5) by thorough relaxation of the temporomandibular articulation. The last method just named is preferable, and should be used in all instances except in those

Shows Method of Relaxing Temporomandibular Articulation

rare cases in which it is impossible to get sufficient relaxation of the articulation to permit use of the condyle of the mandible to produce the desired effects upon the eustachian tube. As a rule, in the hyperplastic and atrophic stages of this disease, inflation of the middle ear does not produce any temporary increase in the hearing.

In way of treatment, as a rule it is advisable, if possible, to remove the underlying causes before administering any kind of local treatment for the purpose of removing the conditions due to results of the catarrhal inflammation. But after these causal factors have been removed our most valuable therapeutic aid is the thorough relaxation of the temporomandibular articulation by manipulative treatment. To accomplish this, place the patient in the dorsal position, and with the mandible relaxed, repeatedly draw the condyle of the jaw gently but firmly downward, and medialward, and then release it. In this way the condyle is used to relax and normalize all of the soft structures which lie in close relation to the eustachian tube (see illustration).

The fact is demonstrated that this procedure is followed by a definite beneficial result upon the middle ear when we realize that, as stated above, this method is used as one means of ventilating the middle ear cavity. That is to say, as this technic sufficiently drains the engorged mucosa of the eustachian tube to enlarge its lumen and permit the air to enter and equalize the atmospheric pressure, thereby temporarily improving the hearing, continued applications of this technic should produce permanent therapeutic results.

In the treatment, therefore, of chronic catarrhal otitis media, first of all remove the underlying causal factors and then administer the manipulative mandibular technic, in conjunction with local treatment and topical applications.

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Diagnosis and Treatment*

ABDOMINAL TREATMENT IN A CASE OF ASTHMA

DONALD B. THORBURN, D.O.

The patient, a woman of forty-four years of age, had enjoyed uniformly good health until about three years ago. At that time, following pregnancy with instrumental delivery, she became subject to frequent spells of nausea, backache, chills, and an almost constant headache. She consulted several medical men without obtaining relief. The backache had meanwhile become so bad that she underwent an operation for uterine suspension at which time her appendix was removed as a routine measure. Contrary to promise the backaches were just as bad as ever for a long time, but gradually decreased to a great extent.

About eighteen months ago she began to experience slight attacks of asthma which varied in intensity as time went on. In May of 1927 she applied to the Clinic, where after complete roentgenray examination, some of which we will demonstrate here, she was advised to try the oil injection treatment, which she reports helped her general condition, including the headaches. She started treatment at the Clinic late in October but the asthma was affected so adversely by it she got almost no sleep at night and was practically confined to bed during the day.

She therefore discontinued her visits to the Clinic but was persuaded to resume treatment after a week's absence. At that time she was assigned to my service. The first treatment gave her immediate relief, and to quote her note to me, "That night was the first comfortable night I had had in more than three weeks. It is now about five weeks ago and I have had no attack since."

Since that first treatment she has twice been given the general osteopathic treatment, followed in each case by an uncomfortable night with a tendency to recurrence of the asthma. It seemed to me that we had gotten the maximum benefit from the oil injections so I asked that they be discontinued at the time of the first treatment. Since then she has had a full daily movement.

The prime question in this case is what was done and how was it accomplished.

Asthma, which is chiefly an expiratory dyspnea resulting from a spasm of the bronchial muscles may be caused by the following agents:

1. *Inspiratory*, such as vegetable pollen, the dandruff from animals and dust.

2. *Ingested*—Caused by a host of vegetable and animal proteins.

3. *Bacterial*—The staphylococcus and organisms seem to play a part in the production of an asthma.

4. *Metabolic*—Abnormal products of primary digestion in stomach and bowels; and abnormality of internal secretions.

I was convinced after a thorough study of the history and the roentgenograms that we were dealing with an asthma of the metabolic type, caused probably by the abnormal products of a much delayed passage of material through the intestines.

It would appear then, that our best hope of success with the asthmatic symptom would be to revert back to the probable cause, the digestive tract, and direct our attack there. I felt that the patient had had enough of the bony corrective treatment and contented myself with a careful muscle manipulation of the entire back and neck. I then turned my attention to the abdominal region and found marked spasticity and exquisite tenderness of the entire area. I felt that here was the key to the situation, but realized that it would have to be a very delicately conducted procedure to permit a direct intestinal manipulation in a case of this kind. I was therefore satisfield with gentle pressures, and where possible, a few light strokes, especially in the region of the solar plexus, with the hope only of making a beginning rather than bringing about any great immediate change. What resulted you have heard from the patient's own story.

Now coming to the question of just what was done to cause this quick cessation of a very annoying symptom.

It quite obviously was too immediate to have been the recession of the bed of toxin in the intestine and system generally. It must therefore have been a reflex effect of the treatment causing a relaxation of the bronchial muscle. The asthma therefore, while probably indirectly due to intestinal retention, was more directly due to the flood of nerve impulses bombarding the solar plexus from the various kinks and contractions incident to her intestinal condition and flowing back over the vagus, resulting in the bronchial spasm.

INTESTINAL PTOSIS AND ATONIA

The subject of intestinal ptosis and atonia with its cause and effect is one that admits of much discussion and one that is extremely puzzling in many of its aspects at the present time. We have come to the conclusion that a great many of the effects are from pull on nerves and blood vessels. We know that the blood vessels which, running in the mesentery supply the intestines, are fixed at their aortic or vena caval ends as well as at their intestional connections. The nerves also are fixed both centrally and at their peripheral attachment in the intestines. Naturally a drop or elongation of several inches stretches the blood vessels, reducing the size of their lumen, resulting in a marked circulatory difficulty. The nerves being constantly on the stretch are subject to a continual flow of irritating impulses both to the intestine and to the brain, complicating the situation still further by intestinal manifestations and by the brain symptoms which are so commonly an accompaniment of that type of condition. There is another aspect of the intestinal malformation that must be considered, and that is the fact that the slump brings unaccustomed relationships and pressures between various segments of the intestines themselves and between the abdominal organs. The nerves contained in the peritoneal coats of these viscera being subjected to this unusual irritation respond by relaying the message of the irritation back along the sympathetics to their various connections, including the brain, re-

*Given at the meeting of the New York City Osteopathic Society.

sulting in the depressions and hysterias which so frequently complicate cases of this kind. It also sets up a reflex contraction of the circular muscle of the intestine at the place of contact, resulting in a slowing up of the progress of the intestinal contents and in nerve waste, due to the setting up of thousands of tiny muscular contractions in the impinged intestinal segments. Then too, under conditions of abnormality bordering on the inflammatory, the peritoneal fluid becomes more readily coagulable and the organs brought into new and irritating contacts tend to stick, prolonging the condition just mentioned and setting up functional conditions in the abdominal viscera which may at first simulate and then develop into a real pathology. The grosser malformation presents a clearer picture. As shown by the roentgenogram, in a condition of this kind the progress of the bowel content is markedly impeded. In addition to lack of tone of the intestinal musculature we have corners and kinks where there should be curves. Above the kinks, the bowel distends under the pressure of retained material and gas, resulting often in pockets in which fecal material safely lodges, giving rise to a fresh train of symptoms either through pressures or the absorbed toxin, while the carthartics taken flush the intestinal canal proper without touching the real source of the poison.

So we see that as a result of a ptosis or atonic condition we have a general impairment of the body economy through the nerve forces, through circulation, and from the effects of intestinal poisons operating also mainly through these channels. The intestine is connected nervously with almost every part of the body, and it should be a matter of no great surprise to discover symptoms, mental and physical, which, obscure in their origin, are relieved as a change is made in the digestive tract either through the nervous release, decrease of poison, or, what is more usual, the control of both.

There are various methods of attacking a condition of atonicity of the intestines with retention. There are exercise, diet, rest, the use of supports, the gravity treatment, and osteopathic treatment, including an abdominal treatment.

DIRECT ABDOMINAL TREATMENT

It is of this last, the treatment directly on the abdomen, that I wish to speak. It has been my good fortune since my entrance into practice to have been closely associated with this form of treatment, and I can say most emphatically that at the present time I would feel most seriously handicapped were I to attempt to proceed without it. The case we are at present considering is a product of this method of treatment. It is not an adjunct to osteopathy, it is osteopathy in its purest sense. That conception of osteopathy which has for its limit the manipulation of the spinal vertebræ is one that is taking its place with the rattle and crack of the five-minute treatment. We all, I'm sure, give in addition to spinal adjustment a thorough manipulation of the spinal musculature; and why? We believe that through this mechanical stimulation impulses are carried over the muscular branches of the spinal nerve, then over the dorsal root into the gray matter, there forming a synapsis that leads out over the anterior root through the rami communicating with the sympathetic ganglion, and thence to the larger plexuses governing the organ we wish to affect. In this case of the abdominal organs most of the stimuli which we introduce would be referred through the solar, hypogastric, or pelvic plexuses to the tissue or organ which seems to need them. We can direct their level of distribution to a certain extent by working at the level of the spinal segment in relation to the affected part. That this method constitutes a real therapeusis is common knowledge to all of us, as is the very real importance of the spinal lesion in relation to functional and organic disease. Is this, however, any reason for ignoring the fact that the plexuses just named lie practically under our fingers and that through them we can influence nervously every tissue and organ of the thorax and abdomen?

It is impossible at this time to enter into this work in all its phases. The work on the intestines themselves is full of promise when we consider the beneficial results to be obtained from the relaxing of contracted segments and the removal of intestinal irritations through careful abdominal manipulation, thus breaking up the malicious cycle, the first step in giving the body a chance to re-establish the normal.

I realize that probably there is not a person present who has not worked abdominally on a great many patients, but in how many cases was it a careful, painstaking exploration and treatment rather than a general handling of the abdominal structures?

It is a far safer procedure to give the usual spinal treatment and ignore the abdomen completely than to attempt to rather carelessly manipulate a part of the body that in a great many cases is bordering on the inflammatory. On the other hand, if in the beginning the operator will be content with the lightest possible pressure, increasing only as the condition allows, starting his treatment in areas least affected and working gradually toward the center of involvement, he will be gratified and in his first cases surprised as well by the results he will obtain.

Let me repeat at this time that I fully appreciate the fact that every osteopath has paid some attention to abdominal manipulation. In the ordinary non-irritated condition even an ordinary abdominal massage will do good. The object of this talk, however, is to encourage the use of abdominal work as a routine part of our treatment—not to be given as a general intestinal mauling, but with the nice regard for detail, the searching out of the implicated areas, the striving for increased depth as the condition permits, and the development of the proper technic without which a large portion of abdominal attention is either wasted or dangerous.

The abdomen is a playground for no one. It is the battlefield on which may be fought out the major engagements of many people's health problems and it should be approached with the respect and caution due a strategic position.

Let us bear in mind that in thorax and abdomen we have the great majority of the vital organs of the body and realize that through treatment of the abdomen, be it directly through nerve centers or through effects of treatment on organs, we have possibilities for good or for evil not rivaled by the manipulative treatment of any other general area of the body's makeup.

Hotel White, 303 Lexington Avenue,
New York, N. Y.

Physiotherapy

HERMON E. BECKWITH, B.A., D.O.

Professor of Radiology and Physiotherapy in the College of Osteopathic Physicians and Surgeons, Los Angeles, Calif.

INTESTINAL STASIS

Article XIII.

In this article we are taking up the question of treatment of the great American disease, constipation, and its more insidious relative, intestinal stasis. It is common for people to believe that they have no intestinal trouble if they do not have constipation. This fallacy is the direct cause of much suffering and of much ignorant doctoring on the part of the professional man.

It will be impossible in one small article to consider this subject to any great extent. All we can hope to do is to mention a few of the more prominent facts and hope that they will lead to thinking that will develop the other questions and thus lead to more personal investigation. It would take a book to treat this subject as it ought to be treated. A preliminary survey of a few general facts regarding the pathologies present and the possible causes of some of these conditions will help in making this article clear.

A very large percentage of the million people who are really suffering from some form of intestinal stasis are, today, being treated for almost every symptom common to man, and the underlying causes of the same are being entirely neglected. There are a million people in this country who are victims, more or less, of gastro-

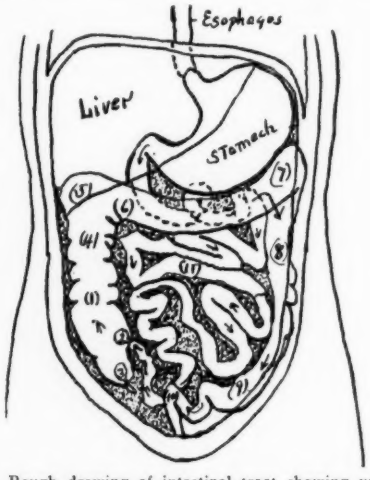

Fig. 1. Rough drawing of intestinal tract showing various parts mentioned. 1—Cecum. 2—Ileocecal Valve. 3—Appendix. 4—Ascending Colon. 5—Hepatic Flexure. 6—Transverse Colon. 7—Splenic Flexure. 8—Descending Colon. 9—Sigmoid Colon. 10—Rectum. 11—Small Intestine.

enteroptosis. Their gastro-intestinal tract, in whole or in part, has become more or less atonic. The ligamentous suspension has become draggy; the muscles of the gastro-intestinal tract have become more or less relaxed, the peristaltic wave is weak and entirely insufficient to force the food contents along the tube.

These people go to the oculist for eye trouble and he announces that errors of refraction are often systemic; the laryngologist reports catarrh, which he claims will clear up when the patient's general condition improves; the dermatologist also says that many skin affections have their cause in the gastro-intestinal tract and that a cure must depend upon systemic therapy and not upon skin ointments, powders, or lotions; the cardiologist, to whom a patient has come for "heart disease," searches the body over for some focus of infection. We know that the common sites for these foci of infection are along the gastro-intestinal tract.

Jordan, in his masterly work, "Intestinal Stasis," gives especial attention to the following subjects, as diseases that may arise as a direct result. In some cases he devotes an entire chapter to the particular disease and its relationship to the intestines. Among the more important diseases, he mentions derangements of the ductless glands, neuralgias, neuritis and such general diseases, mental disturbances, neurasthenia, epilepsy, heart disease, high blood pressure and pelvic disturbances.

With the roentgen ray we find that it is difficult to define the normal limit and position of the various parts of the bowel. There may be considerable variation of these factors and yet there are all the evidences of perfect health. There is no textbook-normal intestinal tract. Rehfues writes, "It makes little difference where an organ is as long as it performs its functions." Ptosis of the intestine or a part of the intestine is the least culpable factor in the syndrome, unless it is the direct cause of a sharp kink, thus causing a mechanical stoppage of the food contents. The most potent factor in the syndrome is the peristaltic wave. We may have loops, kinks, marked ptosis and any other potential cause of stasis, yet, if the peristaltic activity is sufficient to empty the tube we will not have intestinal stasis and its resulting symptoms.

One of the common sequelae of intestinal stasis is the change in intestinal flora. There is a great deal of material published on the treatment of constipation by the

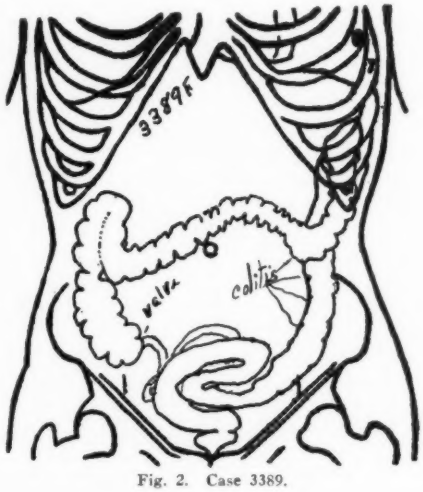

Fig. 2. Case 3389.

use of various foods and cultures to change the intestinal flora. We have tried this method out and we do not believe that the results are anywhere near as successful as they are when one considers the intestinal flora as a result of the stasis and treats accordingly. Concerning this subject we would like to quote from Dr. Frederick Morse, who has done so much along the line of therapy in intestinal stasis. He writes:

"I feel that a large percentage of physicians are off on a tangent when gastro-intestinal toxemias are treated on the intestinal flora basis. I think the day of treating symptoms and not the cause has passed. I feel that it is but common sense that if a man has a stagnant gastro-intestinal tract he cannot help but have an increase of intestinal flora. The treatment of the flora will not remove the cause. Yet I do not feel the patient should be treated in spots and the intestinal tract be given all the consideration. Most of these patients are low in hemoglobin, and their kidneys have been trying to do double duty. The urine is heavily laden with indican and generally gives a high urea test."

We believe that Dr. Morse is right, and that in a large share of the cases if the matter of stasis can be cleared

up, then the matter of the flora will be taken care of by the intestines.

Regarding the technic of treatment, we believe that actual illustrations of cases with brief history and outline of treatment will be the most instructive. In all cases diet is considered. Mild laxatives are used. The basic principle of the treatment depends upon the sine wave or the sinusoidal currents; laxatives and enemas being reduced just as fast as is consistent with the progress of the tonic effects obtained by the electrical stimulation, etc.

Concerning the electrical current as a means of treatment, we might add that we believe it by far the most

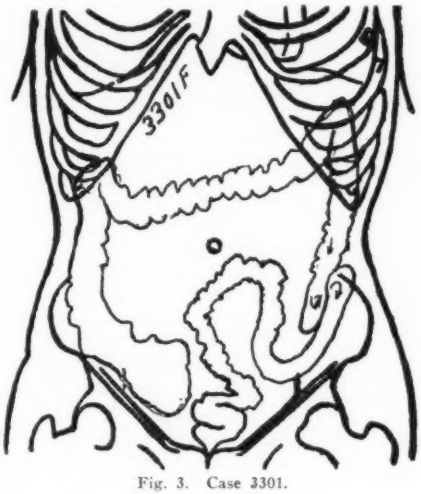

Fig. 3. Case 3301.

potent means of therapy we have today. Neiswanger writes:

"To prescribe laxatives for habitual use is a temporary relief only, and to permanently increase the difficulty. But in electricity we have a therapeutic agent for the permanent relief of this ailment that cannot be overestimated."

Cumberbatch adds:

"Electricity is probably the most efficient method of treatment known."

Plank writes:

"Drugs can only be used for temporary relief; and the sinusoidal currents are the indicated remedy."

For the sake of comparison the first drawing is that of a normal intestine and stomach, showing the relationship between the different parts and their descriptive names.

CASE No. 3389.

Patient.—Middle aged female school teacher.

Chief complaints.—No strength; gas in bowels and constipation.

History.—Nothing of any moment. Has been constipated all her life. One specialist had her dying with tuberculosis and dieted her with milk and iron. Complains that urine sometimes scalds.

Findings.—Indican in urine. Blood pressure: systolic, 190.

The drawing made from the film speaks for itself Note the low relaxed rectum, with sigmoid loop above; the area of colitis and the valve leakage.

In the treatment of this patient (Case No. 3389) we start with a little diathermy in order to help reduce the inflammation present and then follow with an interrupted sine wave current. We use about eleven interruptions per minute and place two electrodes on the abdomen, one over the hepatic flexure and liver and the other over the splenic flexure. The two abdominal electrodes are attached to the same wire. The other wire, to complete the circuit, is connected to a sigmoid electrode which is inserted into the rectum.

This treatment is given about ten minutes and then the electrode over the splenic flexure is disconnected and the sigmoid electrode is taken out. Replace one pad over the cecal area and the other pad to the back in the mid-dorsal area and allow the slow interrupted current to pass another five or ten minutes. The results in this case were excellent in every way.

CASE No. 3301.

Patient.—Middle aged woman.

Chief complaints.—Liver sluggish, tongue badly coated, prolapsus of uterus.

History.—Leucorrhea; intercourse painful; no pain in stomach; takes daily help to get bowel action; blood and urine examinations good. Had been tamponed repeatedly by different doctors; and has had several colonic irrigations.

Findings.—Prolapsed uterus. Some pelvic inflammation

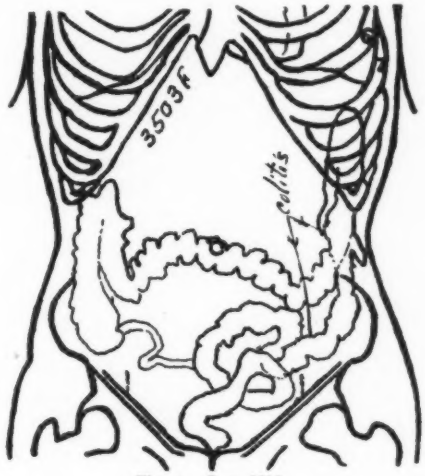

Fig. 4. Case 3503.

—worse on right side. Roentgen ray of colon shows large dilated and a very low cecum; flexures somewhat sharp; large sigmoid loop which, in the upright position, flopped down onto the pelvic structures.

As far as the technic of treatment goes in Case No. 3301, we would follow almost the same as in the previous one (No. 3389), making sure to have the pads well up over both flexures when using them anteriorly. This patient shows a large amount of atonic condition and we find that in these cases often it is well to place two pads on the back, one on each side of the spine and at a level to take in the nerve supply. Each pad is connected to its respective outlet on the machine used. Care should be taken not to allow any current with more than 15 waves per minute to be used. If more rapid interruptions are used, the intestinal musculature is apt to go into a state of tetanic contraction.

CASE No. 3503.

Patient.—Female 34 years of age.

Chief complaints.—Nearly everything.

History—Losing weight; feels miserable; soreness all through abdomen; weak spells; has been nauseated in the morning for several years; history of cancer on both sides; occasional pain in pit of stomach; soda habit; flatulence; constipated, takes something every night; raises a lot of sputum every night and morning; piles; etc.

Findings.—Stomach was very large and low. There was a possible 10 per cent barium residue after 6 hours. At the end of 48 hours the cecum, ascending colon and transverse colon were all quite full of the opaque media. The sinuses were clear; lungs were quite good. Pelvic examination was negative. Blood shows some anemia, and urine shows a little indican. The barium enema reveals some very important information: the flexures are both rather sharp, the splenic flexure being very sharp, thus hindering the passage of food. There is some valve leakage, although not bad. The descending colon shows an area of colitis; while the sigmoid shows a double loop. This double loop is undoubtedly the cause of a great deal of the stasis.

The treatment of Case No. 3503 involves the use of diathermy to start with, followed by the interrupted wave current, using the sigmoid electrode as one and the pads on the abdomen as the other. In order to get a little different pull in some of these cases, I also use a sacrum

electrode and the other under the back in the mid-dorsal area. A powerful contraction can be had by placing the electrodes along the spine this way. Our results with Case No. 3503 were better than we hoped for, the constipation disappearing entirely, as well as cessation of nausea and bad taste, etc. Of course, a strict diet was an important part of our treatment.

CASE No. 3166.

Patient.—Elderly lady.

Complaints.—Headache, dizziness, constipation.

History.—Patient had sustained a light stroke. At the time of our examination she was having a systolic pressure of 240. She had a steady feeling of distress in the head, describing it by saying it seemed "her skull was too small

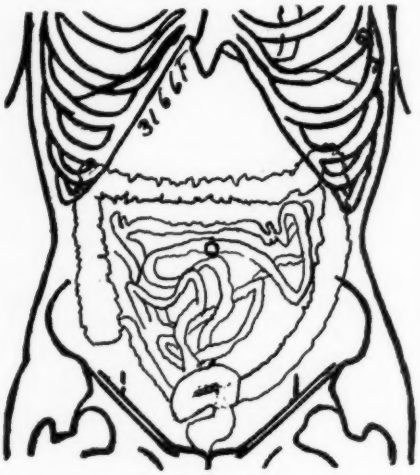

Fig. 5. Case 3166.

for the contents." There was some ringing of the ears and considerable dizziness. Some arthritic trouble was present.

Findings.—Slight anemia; some indican in the urine: high blood pressure; digestion fairly good; no teeth. X-ray of colon shows a low sharp sigmoid loop that crosses itself, the valve leakage so bad that almost the entire small intestine fills.

Our treatment in this case was to reduce the blood pressure, using a diet, autocondensation and manipulative therapy. We did not even give the barium enema until we had reduced the blood pressure until it remained around 180. After we had reached this stage we placed the patient on the interrupted sine wave altogether. We succeeded in getting normal bowel action and the patient has not been bothered with high blood pressure since. We used external electrodes, varying our position at times. We would place one pad low under the sacrum and the other two pads, which were connected to the same wire, were placed high over the flexures. Then we would place the posterior pad across the spinal area near the lower border of the scapula, and the two front pads low down, taking off one of them part of the time so that the current would be concentrated through the valve area.

CASE No. 3506.

Patient.—5-year-old girl.

History.—Not a strong child; has had several of the childhood diseases. Following a typhoid session she never regained her strength. Every week or two she would have a semi-epileptic attack.

Findings.—Pale; underweight and undernourished, although she had everything that was good for her. We decided to investigate the bowels for a toxic condition. She was badly constipated.

The drawing we are showing of Case No. 3506 is not made from the first film as the sigmoid area was so badly "mussed" it was impossible to show it. The drawing here shown is taken from a film made some four months after

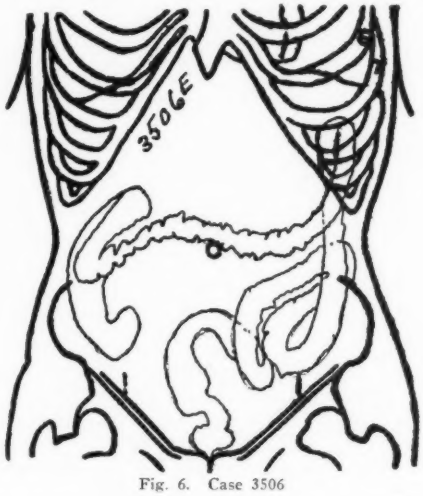

Fig. 6. Case 3506

beginning treatment to learn what we had accomplished. At this time she could eat almost everything—she can now. The constipation was a thing of past history and likewise the attacks which brought her. In fact, she had only one or two attacks after we started our treatment with the interrupted sine wave. You will notice in this case the pretzel-like sigmoid colon and the sharp and hooked-like hepatic flexure and the turned up cecum. The entire colon presents a well rounded out appearance, the loops are opened up and there is good tone. The first film only showed the barium in the sigmoid area and descending colon. It was impossible to force the meal through the loops into the transverse and ascending colons; and it was impossible to make out just how the sigmoid colon looped.

The cases that we have taken for illustration here were all examined and treated over three years ago. We have done this in order to present cases that have had what might be termed permanent results. We saw the little girl mentioned in the last case report about three weeks ago. She is a picture of health. All of these cases were "doctored" by regulars and by osteopaths before they were treated by physiotherapy. We cannot help giving credit to physiotherapy in most part, for we believe nothing else could have accomplished like results..

A MESSAGE TO THE OSTEOPATHIC PROFESSION

H. R. Bynum, D.O.
1317 Madison Ave., Memphis, Tenn.

From time to time, since I first began the development of Compound Leverage Foot and Ankle Technic, I have had requests made to give this in a separate course; but all these requests I have refused, saying that the system was not yet complete, and that as soon as I reached a point where I felt that I had completed the system so that I could handle all troubles of the foot and ankle, I would then have something to say.

During this development I have given freely of my time and effort to the different meetings and conventions, that the members of the profession might see the results of the work. I have also stated in many conventions that the system was perfectly simple, based on the principle of compound leverage and adhering strictly to the law of the joint, and that treatment would produce results without discomfort to the patient. At the same time, simple as it is, it requires considerable work, and doing over and over, to round out the essential points in the technic.

I have also stated many times that there is no ailment with which we come in contact as physicians claiming a greater number of victims than foot troubles—the United States Government estimates that seventy per cent of the people of this country have some form of foot trouble. It is equally true that up to comparatively short time ago there was no trouble in the human family about which so little was known.

The osteopathic physician, by his training and the very nature of his work, is the ideal specialist in foot troubles if he will thoroughly prepare himself to handle this class of cases. A little indiscriminate wiggling of the foot does nothing more than disgust the patient and discredit osteopathy. I say this because I know of some osteopathic physicians who are doing this very thing, when they have never seen a foot demonstration and have never taken any kind of a course, but because there is an increasing demand for foot treatment they attempt to do something about which they know absolutely nothing. So, if one expects to do foot work, it is certainly up to him to prepare himself to do it and not try to wiggle the foot around and call it a foot treatment. For there is no technic in the whole system of osteopathy that is more highly technical than the treatment of the foot; but when thoroughly mastered, it is comparatively easy to give.

Next came the request for a book on foot technic. An announcement was published recently in THE FORUM on that subject, and since then I have had dozens of letters with requests for the book. Regarding this I would say, to make the book at all valuable to the profession it would be necessary to cover the subject thoroughly, with many illustrations to convey the proper ideas.

While it is quite a task to write a book of this character, I am willing to do so if I have the proper encouragement and cooperation. At the same time I do not believe, to get the best results, that a book itself will fill the bill, because there are so many parts of the technic that must be frequently demonstrated before one becomes thoroughly efficient.

I believe that the best results can be gained through a proper course of instruction with the book as part of the course. Then the doctor would have the immediate benefit of the demonstrations and the future benefit of the book for reference.

My proposition is briefly this:

I will teach this method of treatment, devoting all the time necessary for thorough instruction in the subject, and deliver a copy of the book for $50. To make it easy and within reach of all, this sum may be paid on the basis of $10.00 at the time of registration and the balance divided into payments covering a period of one year.

Senior students now in school will be given the course on the basis of $5.00 cash, and the balance divided into quarterly payments of $5.00; the first two quarterly payments to be made direct to the American Osteopathic Association and applied on the first year's dues in that organization—an arrangement especially valuable to every new graduate.

Any physician or student is entitled to attend, without cost, any subsequent class that may be organized for the purpose of review or to get the benefit of any new points that may be developed.

The first course will be given at the National Convention at Kirksville this year, and for those in the different parts of the country who do not go to Kirksville or to any future National Convention, I will do this:

Where as many as twenty practicing physicians at any state convention wish to take the course, I will make them the same terms as above, with the addition of my expenses to and from the place of meeting.

The registration fee, according to the form on this page, will be held in escrow at the headquarters of the American Osteopathic Association, 844 Rush Street, Chicago, and if a sufficient number are received to justify the work on the book, I will begin preparation. Otherwise, the money will be returned to those who registered for the course under these conditions.

REGISTRATION BLANK

The American Osteopathic Association,
844 Rush Street,
Chicago.

Enclosed please find check for $10.00, registration fee for Dr. Bynum's course in Foot Technic, with a copy of his book on that subject.

It is expressly understood that, if a sufficient number of registrations are not received, the A. O. A. is to return my registration fee.

Name .....

Address .....

Book Notices

PATHOLOGICAL PHYSIOLOGY OF INTERNAL DISEASES. By Albion Walter Hewlett, M.D., B.S. Revised In Memoriam by his Colleagues. Under the Editorial Supervision of George DeForest Barnett. Cloth. Pp. 787, with 164 illustrations in text. D. Appleton & Company, 35 W. 32nd St., New York City.

The many new discoveries in the field of physiology and pathology call for constant revisions of textbooks covering these subjects. This new edition of a work first published in 1916 endeavors to show how the knowledge of physiology and its pathological manifestations may be applied to the practice of medicine. Our concepts of the causation of disease and the methods for treating it, are constantly being revised to keep up with the latest findings of research organizations. We welcome these new books which tell us of the latest findings of the laboratories.

Every practitioner, whatever school, will welcome this truly scientific and studious presentation of functional pathology.

The book is well printed on good stock, with a large number of illustrations, and is fully indexed.

GYNECOLOGY. By Howard A. Kelly, A.B., M.D., LL.D., and Collaborators. Cloth. Pp. 1043. Illustrated. D. Appleton & Company, 35 West 32nd St., New York City.

This handsome book would seem to be the last word on the subject of gynecology. Like most Appleton publications it is so beautifully printed and bound that it is a pleasure to read it, and the excellent paper used makes the hundreds of handsome half tones, line drawings and color plates stand out with remarkable clarity.

The entire subject of gynecology is covered, beginning with the anatomy and histology, the technic of examination, and a thorough discussion of every condition which affects the female organs of generation, including special chapters on the use of radium, Roentgen ray, ultraviolet and electrotherapy in their application to treatment of this class of disorders.

Dr. Kelly has had the assistance of a large group of other writers, who have collaborated with him in writing special chapters.

The book is well indexed. It is one of the finest and most complete reference works and texts on gynecology that we have been privileged to review.

PHYSICAL DIAGNOSIS. By Charles Phillips Emerson, A.B., M.D., Professor of Medicine, Indiana University School of Medicine. Author of Clinical Diagnosis. Cloth. Pp. 553, with 324 illustrations. Price $7.00. J. B. Lippincott Co., Washington Square, Philadelphia, Pa.

We can never get enough information on diagnosis and the newer the text and the better it is illustrated the more helpful it is. This new volume just off the press is very complete in every respect and will be most helpful to either student or practitioner.

It is systematically arranged and profusely illustrated with hundreds of fine half tones and many line drawings. This volume is very attractively bound, as all Lippincott publications are. We feel sure this text will become popular after it is better known.

MUSCLE FUNCTION. By Wilhelmine G. Wright, with a foreword by J. Playfair McMurrich. Cloth, 188 pages, 26 illustrations. Paul B. Hoeber, Inc., 76 Fifth Avenue, New York. 1928.

Miss Wright was for years in charge of the gymnasium maintained for their orthopedic patients by Drs. Robert W. Lovett and James S. Stone.

It was necessary for her to know the functions of the muscles, and her investigations led her to doubt the accuracy of the information published in the ordinary anatomy texts. Her work has been such that she could observe endless combinations of paralyzed and of normal muscles and the results of her studies are given in this excellent text.

ABOUT OURSELVES. By H. A. Overstreet, Professor and Head of the Department of Philosophy, College of the City of New York. Cloth. Pp. 300. Price $3.00. W. W. Norton & Company, Inc., 70 Fifth Avenue, New York City.

We read so much about psychiatry these days when every newspaper and magazine is discussing crime and its

causes, that it is refreshing to find a volume which deals with the workings of the normal mind, or as the author puts it, "psychology for normal people."

Professor Overstreet has prepared a book which laymen particularly will find of interest, as it is not too technical for easy reading. A physician too, will greatly enjoy it, and will be greatly benefited by the many findings of the psychological researchers.

A few sentences from the author's foreword are of interest: "The difficulty with most of us is that we suffer from the familiarity which breeds a dulled awareness. Ourselves we have with us always—and in consequence we know least about ourselves. It is refreshing at times to break in upon this dullness with pictures of ourselves taken from different angles and with a wider perspective. For by that means the dullness suddenly leaps into unexpected vividness. We are awakened to a different sense of ourselves. Our personal traits are then revealed as determining factors in our lives which are carrying us towards triumph or defeat. It is precisely such a revelatory awakening which the work of the more recent psychology has brought about and which these pages will, in a measure, carry over to the reader."

GROWING UP. The Story of How We Become Alive, Are Born and Grow Up. By Karl de Schweinitz. Cloth. Price $1.75. Pp. 111, with illustrations. Macmillan Company, New York. 1928.

After reading a shelf full of inane books and booklets, each pretending to tell what children should be told, it is not only a relief, but a positive delight to find this beautifully printed and remarkably illustrated book which really does tell. The only book this reviewer recalls which is worthy to be mentioned in the same class is another Macmillan publication, "How I Came to Be," by Armenouhie T. Lamson.

LEAVES FROM MY LIFE. By Sir Herbert A. Barker. Cloth. Pp. 319, with sixteen full-page illustrations. Price 21s. Hutchinson & Co., Ltd., Paternoster Row, London, E. C., England.

The world's foremost bonesetter here sets forth the story of how he learned the methods of his illustrious predecessor and cousin, Atkinson; of his early struggles to secure recognition; of the fight made against him by the British Medical Council; of Dr. Axham's courageous stand in persisting as an anesthetist for Barker, despite the savage opposition of his professional brethren; of Barker's remarkable services to the soldiers during the war; the recognition given him by the government in knighting him, and the persistent attitude of the medical profession that there is nothing in manipulative surgery which they do not know and can not perform.

Even apart from the interesting autobiography, the newspaper extracts and the correspondence with various authorities, gathered together in this volume, make it worthwhile for any osteopathic physician to own.

WHAT YOU SHOULD KNOW ABOUT HEALTH AND DISEASE. By Howard W. Haggard, Associate Professor of Applied Physiology, Yale University. Cloth. Pp. 538. New York, Harper & Brothers, 49 E. 33rd St. 1928.

This book proceeds on the theory that every educated man should know something of physiology—that the most important things in knowledge have to do with how to live fully and healthfully. Those who sponsor it believe that such knowledge is necessary for individual physical welfare; for an understanding of man's place in nature; for correct political opinions on public health questions; and in the case of employers, for the profitable management of those whose working bodies are the most important element in the production of wealth.

It is written, in part at least, as a textbook for college students, and Professor Henderson in his introduction, urges that such a book should be studied at the beginning of a medical course, so that students would begin by getting a broad survey of the practical uses to which their studies will lead, instead of being required to start with seemingly unrelated courses in anatomy, physiology and other branches. In fact this man insists that, getting away from arduous details, it will be found that the broad, general, major matters in the science of modern medicine are of no greater volume than those of physics or economics, and that their elements should be mastered in a single course of three exercises a week for a year.

The book goes into each phase of the health and ailments of the race, but into none of them so deeply as to be tiresome, ponderous or baffling to the general reader.

THE BACKBONE OF THE HOME. (A Cook Book.) Loose leaf, flexible cover. Pp. 228. Price $3. Compiled by the Women's Osteopathic Club of Cleveland, Ohio. 1927.

An interesting and valuable collection of tried and true recipes, contributed by women osteopathic physicians and wives of osteopathic physicians over the country.

The book carries the message, not only of right cooking and eating, but also of osteopathy. It opens with some verses by Dr. John H. Styles, Jr., an introduction by Dr. Josephine L. Peirce, a page of favorite recipes of Dr. A. T. Still, used through the courtesy of Mrs. Blanche Still Laughlin, and a picture of Dr. Still, with two or three paragraphs about osteopathy.

Scattered through the book, usually at the beginning of the various sections, are articles by leading osteopathic physicians. One on "Fish and Other Sea Foods," by Dr. Millie Estelle Graves; one on "Meat and Eggs," by Dr. George V. Webster; one on "Uncooked or Sun-Cooked Foods," by Dr. G. W. MacGregor; "Responsibility of the Mother," by Dr. O. E. McFaddon; "Salads and Salad Dressings," by Dr. Nella B. C. Drinkall, and "Feeding the Undernourished Child," by Dr. Ira W. Drew. There are also articles headed "Choosing a Profession" and "Osteopathy Is a School of Medical Practice."

A section at the end of the book contains a number of recipes from many European and Asiatic countries. Friends of osteopathy have sensed the value of the book as an advertising medium, and so there are several pages of advertising.

The Backbone of the Home can be ordered through the Central office of the American Osteopathic Association.

Business Efficiency

THE EFFICIENT OSTEOPATH

C. C. REID, D.O.
Denver

XVII

SCHEDULING

What we mean by scheduling is that the doctor shall have certain hours which he works and will list his patients according to the work to be done at the various times of day during his working hours. Doctors who do surgery usually schedule this the first work to be done in the morning. This, perhaps, is the best time for surgical work. It gives the day in which patients can recuperate from the anesthetic and shock of the operation, at a time more pleasant and when better care can be given. Also, the vitality of the system tends to go upward in the morning, remaining so until late in the afternoon.

Straight osteopathic practice can be carried on in a better way at the office by scheduling. Of course, a doctor doing acute practice, emergency work, obstetrics, etc., cannot always schedule as closely as one doing almost all, if not altogether, office work, which is chiefly treatment of chronic conditions. Many schedule their patients for fifteen-minute periods. Some schedule on ten-minute periods and some on twenty-minute periods. I know one doctor who allows thirty minutes for every patient. The scheduling should be done according to the practitioner's status of efficiency, his ideals of practice and the kind of work he is doing.

It is my opinion that every doctor doing office practice for regular treatment work on patients should schedule his time from seven to fifteen minutes. If he is not efficient enough to handle patients within that time he should certainly proceed to reform his technic and method of handling patients sufficiently for him to schedule within that time, otherwise he will make a very poor showing if he must raise a family, go to conventions, buy libraries, run automobiles and take vacations.

Some specialists see their patients one after another quite rapidly for treatment. Of course, it takes them longer to make an examination. The more highly one is specialized, after the examination is done, the treatment mapped out and the directions given which the patient

is to follow, the rule is the more rapidly he can handle his patients.

I know some in the osteopathic profession that seem to have no trouble handling fifty or sixty patients a day, while others labor very hard to handle twenty, and some think they are doing very well, indeed, if they get through with ten to fifteen. I refer to office patients and office practice

With this great variation in the number of patients which our doctors are able to schedule in a day, we should all be impressed with the idea that efficiency in practice means very much in the life of the doctor.

OFFICE HOURS

Some doctors schedule their hours, beginning at 7:30 a. m. and going through to 6 p. m., with twenty minutes out for lunch. This is the extreme in office hours and no doctor can keep it up many years until he is ready to retire on his fortune or with a broken back. The general rule for the doctor in his office practice is to begin his work about 8:30 in the morning, with thirty minutes to an hour off at noon and then back to the office until 5 o'clock. These are long hours. The young and strong physician should schedule something like this, giving his attention to his professional work at least that many hours every day.

Some might say, "Suppose he only had two or four hours work. Why stay around the office so early and so late?" The best plan, if there are only three or four hours work in the day, is to schedule the patients in the morning, beginning at the regular hours and placing the patients one after another on the schedule and so handle all the patients he has in the morning. If there are some that insist on the afternoon as being their most desirable time, start to fill the day in the afternoon and take one after another as far as they go.

Utilize the time out of every day during which no patients come in, if the sparsity of patients allows. This will make it possible for the doctor to sit down at his desk, clean up his correspondence, follow up his textbook study, read his magazines, plan his work, have a conference and make progress. If one has only a half day's work and yet scatters the patients through the full day, there will be time wasted between patients in intervals that are too brief for any other constructive work.

Some of our doctors, in taking care of forty, fifty or sixty patients a day, do not schedule very closely. Many of the cases only require from three to five minutes to do the work necessary. Others require a little longer. Their method of schedule is to tell the patient to come at 9, then they will tell a half dozen others to come around about the same time. They will throw in a bunch at 9:30 or 10, estimating twenty to thirty in the half day, giving those who prefer the morning the morning hours and doing likewise for the afternoon hours. This will frequently bunch the patients to some extent, but when the patients move along so efficiently that no one has to wait very long there is no complaint.

Many medical doctors merely tell the patient to come back on a certain day and leave it to their convenience as to when they put in their appearance. This is not a very good plan if the doctor has a large number of patients; there should be some semblance of a schedule, at least.

I understand the plan at the Mayo clinic is that the patients come in and register for the day which they want. I have seen what seemed to be two or three hundred patients waiting around the clinic. Many of them, of course, go in at the same time, passing into various rooms where different doctors are working. They go from one to another, according to the specialty. Their methods and plans are so standardized that they handle large numbers very efficiently.

Osteopathic groups have some similar methods. Numbers of patients will be going through at the same time, going to the various specialists. For the general run of osteopathic practice it is our conclusion, after many years of practice and study, that the osteopath should have a definite schedule for his patients and give them the hour when they are to come. This schedules the day. He should also schedule the years. The doctor should look far ahead and schedule his life to some extent, according to years. In looking through one year he can see how many months he wants to work.

No doctor should work every month in the year in his office. Many of our doctors have already come to realize that they can do as much work in eleven months as they can do in twelve months, and some have gone so far as to say they can do as much work in nine months as they can in twelve. They will go away hunting, fishing and camping for about one month. They get their health in good condition, then they take some postgraduate work. This gives them refreshing visions and more inspirations and information, which make them much more efficient for work when they get home. Then they go to conventions, where they meet large numbers of progressive doctors of the country. They make warm friendships, good professional associations that bring much referred work, and incidentally give them the other person's viewpoint. Many lessons on practice management and methods will be obtained through these personal contacts.

The doctor should also plan in his schedule to save some money every year, as well as to advance professionally. By speaking of the doctor's vacations, there is no intention to intimate in any way that a doctor should retire a part of each year, go to some resort and hibernate, stagnate, dissipate and degenerate. Nor should he lay off to run a ranch, become a salesman or a loafer, or anything else disconnecting himself with his profession. I have known this to happen in the lives of numbers of our physicians. After these periods of retirement they are often completely out of touch with their practice and their patients, sometimes their morale deteriorates and they go into permanent retirement, never having the nerve to master the details of practice and become a real success.

IRREGULARLY SCHEDULED HOURS

Outside of the regular day hours scheduled for work, many physicians have evening and Sunday hours. Personally, we never have regular scheduled hours, either in the evening or on Sunday. We try to live like other normal human beings, as far as possible. The doctor can readily and easily become a slave to his patients, if he gives way to their whims and desires to meet them for treatment on any and all occasions. They will absorb his evenings and Sundays to the extent that he has no home life, practically no leisure time for himself, his family or his hobbies.

One who will let the public get his Sundays and evenings is the very one who will refuse to take vacations or postgraduate courses, or go to conventions. He may feel that he is making some extra money. In the long run he will not make as much as, nor enjoy his life as well as, the fellow who becomes master of the situation and brings the general public into his arrangements for his own convenience.

Many times I have noticed people who wanted to come on Sunday could come just as well on week days. With very few exceptions they can all do that. The same rule holds good for the evening. Merchants used to keep their stores open until 9 o'clock at night. They thought this would accommodate the public and cause more business. Of course, it probably was more convenient for a few people who were bound quite closely to their occupation all day and could only do their shopping in the evening.

I have never heard of any storekeeper making any serious complaint of loss of business since the merchants adopted the rule of closing their stores at 5 or 6 o'clock; thereby compelling the people to shop at regular daytime hours. The merchant in those times was warped in his vision of things, and allowed his gullibility to influence much the same as some doctors do these times.

My advice to any doctor would be try to live a normal life, even at the risk of some business. Educate the public to meet your convenience. Keep reasonable hours; do not have regular evening hours or Sunday hours. This is not saying that you should not work and work hard, but have a regular time for taking care of patients, and unless you are doing acute work, emergency, work and obstetrics, regular scheduled hours can be kept. This will give you a good day's work caring for patients and save you much time for study, writing, social life, family life, hobbies, etc.

SCHEDULING LIFE

As I have said before, the doctor should be normal in his life and habits. This means that he is not only a physician, but that he is an active and interested citizen. He is also interested in the activities of his own town.

He should be a man of influence in the affairs of his community.

It has been my pleasure to know personally many active and prosperous physicians who were also influential in the civic life of their communities. They took an interest in the activities of clubs, such as the Lions, Rotary, Kiwanis, chamber of commerce, church and fraternal orders. No one physician can be active in all these things and take care of a heavy practice; but, if every physician would choose some activity according to his liking and use it for altruistic service, growth, hobbies and diversion, he would be benefited and would function as a normal citizen, becoming more useful to his community than the fellow who immures himself in his practice and refuses to take any interest outside of it.

The only way one can follow these various activities outside of his practice is to schedule what he has to do and make his plans accordingly. It is our custom to go into the gym three times a week, at a certain hour in the middle of the day. This is a difficult proposition and many physicians think they cannot afford to do it. We have done this for many years and have very little trouble or inconvenience in carrying it out regularly. It is merely a matter of scheduling. That hour is scheduled for gymnasium work, just the same as if it was filled with a schedule of patients. It is also our custom to schedule every Tuesday from 12 to 1:30 for our noonday luncheon club. It is very seldom, if ever, that we find it necessary to miss the club meeting on account of practice. Emergency work is the only thing that can break these schedules of other activities, and as everyone knows this comes very seldom.

The man who plays golf must schedule accordingly, so also with any activity in life. One's social life must be scheduled, and any church activity, fraternal work or civic conditions must be scheduled in order to be at all reliable.

We plan our schedule as long as a year ahead, scheduling postgraduate courses, lecture work, attendance at conventions and various lines in which we are interested. We have never found that it has any effect in destroying practice. It rather keeps one on his toes, if he properly adjusts all the work. In many ways it has advantages in building up a practice.

GOAT FEATHERS

There is a little book written on the subject of "Goat Feathers." It tells of a man who gave up time from his business to these various charitable, civic, church, lodge and other activities to the extent that he practically destroyed his business. He was the key man to so many situations that he was invited to head nearly every movement that took place in these various altruistic spheres. He did not have the will power nor the discrimination to properly adjust his time and his business to these other activities. He became so absorbed and interested in these side lines that business was seriously damaged. This is possible. We would not be misunderstood in advocating hobbies, civic work or any side lines for a doctor in a way sufficient to damage his practice, or to take him away from his office during hours that should be scheduled for patients.

Colleges

CHICAGO COLLEGE OF OSTEOPATHY

A memorial service for the late Dean J. H. Raymond was held in the assembly room on Wednesday, February 29. The room was crowded with students, members of the faculty and board, and friends of the late dean. Dr. B. F. Wells, acting dean, presided. Dr. H. L. Collins, Dr. George H. Carpenter, Dr. S. V. Robuck and Mr. C. H. Moody of the American Osteopathic Association editorial staff, spoke. The freshman quartette gave two musical selections.

Dr. Collins called attention to the fact that Dean Raymond had spent his life in service to others. Wherever he went, he had tried to raise the standards of the institution with which he was connected.

Dr. Carpenter told of the loyalty of the late dean to the College. He had worked at the sacrifice of his health, and often helped out in financial crises in the early days.

Dr. Robuck spoke of the personal qualities of the dean—his integrity, his industry and high scholastic attainments.

Mr. Moody paid a fine tribute to Dean Raymond, as a man with high ideals, rare sensitiveness and unswerving courage.

On Friday, February 18, the freshman class was at the home of the faculty, all the members of which were invited to the Phi Sigma Gamma house. A very pleasant evening was spent.

We congratulate Dr. Robert I. Mansfield, one of our recent graduates, on the birth of a baby girl, who made her appearance in the hospital March 2. Dr. Mansfield has taken up x-radiance as a specialty, and is settled at Ottawa, Ill.

Dr. O. R. Hard, of Champaign, Ill., paid us a visit recently. We are always glad to meet with the alumni of other colleges, and hope to meet more who are traveling this way.

On Saturday, March 3, the juniors and seniors invited the faculty to spend a social evening at the Phi Sigma Gamma house. A large party assembled, and cards and dancing were indulged in. These get-togethers have proved very successful, and we look for more such social events.

Mr. E. V. Sergeant, of the sophomore class, was married Saturday, March 3, to Miss Ruth Peterman, who is half way to an osteopath herself, being the sister-in-law of Dr. Russell R. Peckham, professor of anatomy at the college.

On Wednesday, March 7, a general assembly was held, for the purpose of getting the spring athletics started. The field north of the college is to be equipped with tennis courts, handball courts and a baseball section. We anticipate some good inter-class competition this next quarter. Dr. Berk, who was in charge of the assembly, has promised his cooperation. With his help things are sure to be lively.

We have heard reports that Dr. F. M. B. Merrithew, who recently went to Seattle to begin practice, has a brand-new baby boy. We offer Dr. Merrithew our congratulations.

The senior prom was held Friday, March 9, at the Piccadilly Roof Garden, and was voted to be one of the most successful in many years. The only regrets expressed are that it is over, and we cannot look forward to it.

The Osteopathic Women's Club of Chicago entertained at a dinner dance on March 15 at the Edgewater Beach Hotel.

Examinations began Monday, March 9, and the students are going about looking as if they had forgotten how to do anything but study. We hope this is permanent, but we doubt it.

Dr. D. L. Clark of Denver stopped at the college for a while on Wednesday, March 21. We were glad to see him, and look forward to another visit from him when he returns from New York.

College affairs are running smoothly under the joint management of Dr. B. F. Wells as dean, and Dr. Floyd F. Peckham as business manager. New students are beginning to enroll for the spring quarter, and some have already signed up for next autumn.

V. V. Frye.

COLLEGE OF OSTEOPATHIC PHYSICIANS AND SURGEONS

STUDENT BODY NEWS

The student body is fortunate in having from time to time inspirational talks by various prominent doctors who happened to be in the vicinity of Los Angeles. Recently Dr. C. J. Gaddis, the national secretary of the American Osteopathic Association, spoke to our student assembly. It is a mighty incentive to listen to a man who has adhered closely to the philosophy that has raised osteopathy to the high level that it holds today.

Dr. Gaddis also spoke in connection with the program which included the "Luminous Shadow," the osteopathic film, in its showing in our school auditorium.

DELTA OMEGA GAMMA

The chapter held a delightful dinner dance for the active members and their friends on March 2 in the pre-

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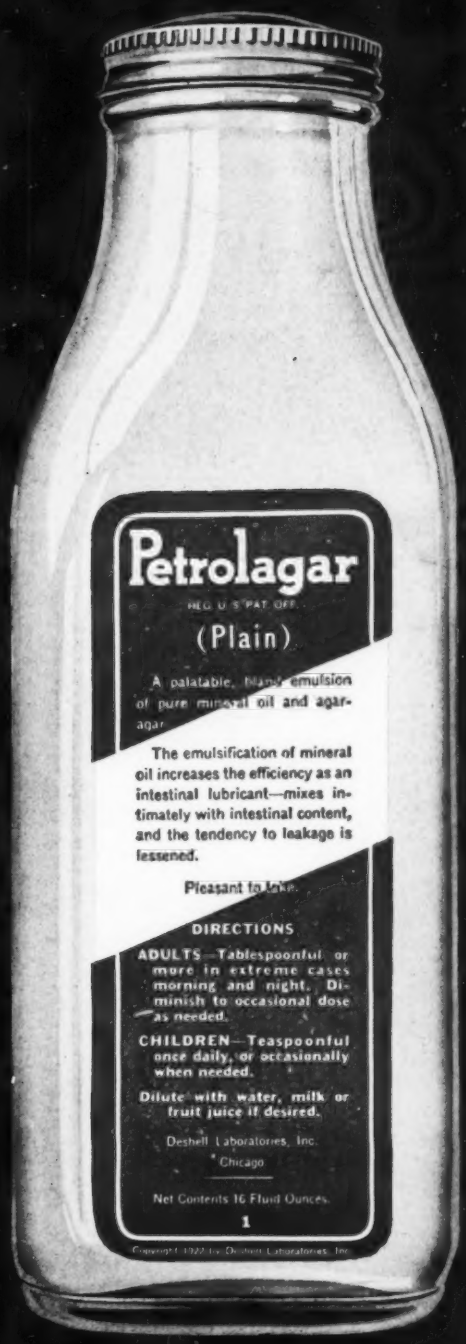
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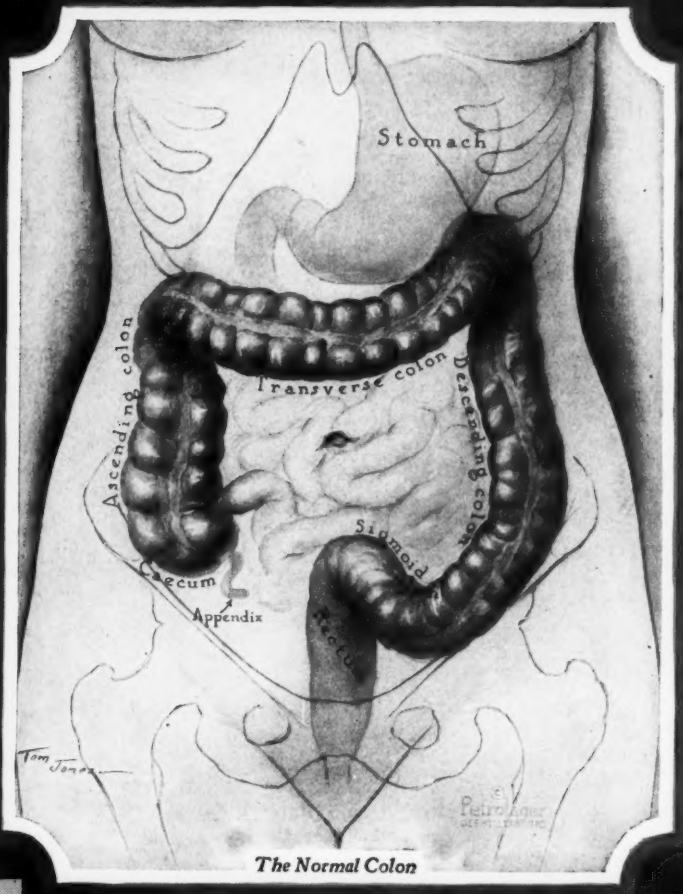

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tentious Casa Del Mar Beach. The sorority colors were prominent in the table decorations and the crest was the motif on the programs. Guests of honor were Mrs. Alice Emery, Misses Bernice Burnette and Betty Mykrantz.

"On February 20 an ethereal initiation was held; time and place unknown, and how! People passed out and in during the ceremonies. Various means of torture were evident. Long and drawn-out attempts at belittling the nodules were administered, all to no avail. Ask 'em! The pledges that were Georgiana Smith and Gladys Waterbury now rightfully claim their status as actives."

ESTHER JOLLY,
Scribe.

KAPPA PSI DELTA

On February 16 in the Music Room of the Biltmore Hotel, Dr. Cora Tasker told the chapter about the mid-winter meeting of the state association at Yosemite, as well as about the early days of osteopathy in California. Guests of the morning were Misses McMillan, Beeson and Burnette, and Mrs. Emery.

On February 18 and 19, in the inviting beach home of Miss Adelaide Hawks, the nine pledges were initiated in the Alpha Chapter. The first degree extended over Saturday afternoon and evening, while the final was given on Sunday afternoon. It is announced that many paddles were worn out before the misdemeanors of the pledging weeks were accounted for. The girls who are now full fledged Kappas are Hilda Newman, Mary Louise Cappelino, Esther Mae Miller, Nell Riley, Eleanor Wright, Clarice Miller, Bernice Skinner, Joe Corcoran and Dora Axe.

In the home of Dr. Olga Meiss on March 1 the officers for 1928-29 were elected. They are: president, Ruth Doan; vice president, Hilda Newman; treasurer, Clarice Miller; recording secretary, Eleanor Wright; corresponding secretary, Adelaide Hawks; field advisor, Dr Zona Morris.

"Alpha chapter wishes to announce the pledging of a new honorary member, Miss Patterson, daughter of Dr. Dorothy Jones Patterson. Little Miss Patterson arrived at the Osteopathic Sanitarium Hospital on the morning of February 27."

ADELAIDE HAWKS,
Corresponding Secretary.

ATLAS

The Cricoid Chapter has been quite active during the past months. We have continued our regular program of educational features which included a talk by Brother W. C. Brigham on Viscero-somatic Reflexes and their importance in early diagnosis. We were especially fortunate in having Brother C. J. Gaddis, national secretary of the A. O. A., to give us demonstrations of his special technic.

Brother James Stewart gave us an interesting talk on "What it's all about" at a recent meeting.

We take great pleasure in announcing the pledging of H. E. Larson, M. D. Smith, P. E. Jones and E. C. Hendricks during the past month.

BRUCE S. COLLINS,
Stylus.

ETA NU CHI

The meetings of this fraternity have been exceptionally interesting, both to the active members and Barbs. The week of February 19 found the Barbs with bedding and wardrobes moved en masse to the fraternity house, there to live and rest their weary bones during "their week." In the oldest of old clothes they went to Balboa Beach on Saturday, where that night Messrs. Doll, Douglas, Funnell, Madsen, Peterson, Root, Thornton and Tucker went through the informal degree. On Sunday night the men were given their final degrees.

Dr. A. L. Munger of Glendale was a recent speaker to the fraternity. His talk was alive with interest and his Stanford experiences were very entertaining.

W. F. MADSEN,
Correspondent.

IOTA TAU SIGMA

Manhattan Beach was the scene of great activity on the night of February 18. As this was the night of nights the pledges had prepared themselves in every way to meet their doom. Several even went so far as to prepare their wills. But even so they all seemed to have a spark of life in them after the second degree was over and by Monday, February 20, they had recovered sufficiently to take their third degree.

On this evening we greeted as brothers Messrs. Haradine, Toler, Axtel, Gilman, Panghorn, Moran, Nelson, Murray, Rossi-Bertolli Pendergrast and Thompson—all fine men and worthy of membership in Iota Tau Sigma. We feel that they are all cognizant of the ideals of fraternalism and that they will always be a credit to Iota Tau Sigma and osteopathy.

We take this opportunity to congratulate these men on their success in winning the highest honor that we can bestow upon them. We know that they will follow in the footsteps of their predecessors and attain the goal that we are all striving for.

New officers were elected on March 5. The result of the elections is as follows: president, John Costello; vice president, E. E. Ehret; secretary, Chas. M. Crane; treasurer, F. E. Dowey; corresponding secretary, E. A. Reible; historian, George Axtel; sergeant-at-arms, Murray.

The reins of government will be turned over to the new administration at our annual banquet to be held at the Mary Louise on March 9. For this occasion a very appetizing menu has been prepared which will be followed by a program of entertainment. But more of this in the next issue.

The constructive program laid down at the beginning of the year is being adhered to, with the result that it is bearing fruit well above our expectations.

CHAS. M. CRANE,
Scribe.

DES MOINES STILL COLLEGE OF OSTEOPATHY

March 9 and 10 marked the close of our basketball season. The last two games were played in Des Moines with the Kirksville team as opponents. Taken as a whole the season was successful and one of which we should be proud. The loss of Max Friend in the middle of the season was made up by the matriculation of Fred Benz, already of basketball fame, and who has been, since his admission to the team, a big factor in the 7-11 combination. That the profession may know the field covered by the college this season we offer the following resumé of the work of the team. Coach Sutton is to be congratulated for the fine work he has done in booking games with colleges of such high standing.

College	Score	College	Score
Still	25	Central	22
Still	25	D. M. Uni.	26
Still	38	Graceland	20
Still	36	Omaha	34
Still	43	Buena Vista	40
Still	50	Trinity	34
Still	40	Western Union	43
Still	42	Lenox	35
Still	20	Platt	34
Still	32	Buena Vista	18
Still	30	Neb. Wesleyan	33
Still	29	Parsons	25
Still	25	Kirksville	22
Still	26	Kirksville	33
Still	16	Platt	33
Still	27	Omaha	14
Still	33	Creston Jr.	15
Still	68	Dana	23
Still	39	Kirksville	27
Still	42	Kirksville	26
Total	686	Total	557

Games won 14; games lost 6.

The "S" Club came to life on February 24 and put on a good old-fashioned dance. This social event will be long remembered, and the club has been asked to repeat at any early date. Those who stayed away had a miserable time. Lee Lindblom as master of ceremonies may be equaled but never surpassed.

Our row of frat houses on Grand Avenue report that everything is quiet now. It seems that the seniors have finally decided to get down to study and have quit annoying the lower classmen.

Drs. Johnson, Marshall, Spring, Steffen and Bach-

man have had their hands full with the clinic. The recent epidemic of flu has brought in an unusual number of post infectious cases, and Virg Halladay has burned nearly eight thousand gallons of gas seeing outside cases of the same type. The Ob. clinic fell down some this last month. DuBois, who claims to know something of the stars, says that there was a major astronomical disturbance the latter part of last June and the early part of July.

Late reports from the Annual are to the effect that the editor has decided to go to work. That means that the Stillonian will be out on time.

Virg, who usually sits at the throttle of a gas buggy, is having to content himself with the slow pace of the Pennsy and N. Y. C. during the week of March 19. He is to appear before the students at the Philadelphia College of Osteopathy for three days and then speak at the Eastern States osteopathic convention. Our good wishes go with him both to the student body at Philadelphia and the members of the profession in the east.

Dr. Marvin Green, one of our graduates of January, 1926, has passed the surgical exam. in Iowa and will locate for the present with his father, Dr. Loren Green, in Sac City, Ia.

KANSAS CITY COLLEGE OF OSTEOPATHY AND SURGERY

We were glad to welcome a goodly number of subfreshmen at the beginning of the second semester. Already they have been run through the paddling line, and so have become regular students of our college.

The basketball season has closed with a lot of good games to our credit. Although our boys won over the City Bank, the Brotherhood of Railway Clerks and the Kansas City University, they met a seasoned group of players in the Folgers Coffee team which they did not conquer. The Osteopaths played manfully, and made it warm for the other fellows, but Folgers is one of the strongest teams in the city and has not lost a single game out of twelve this season. In the final count the osteopaths ranked third in the International Division of the M. and J. League. A banquet was given in their honor on March 20, which was an enjoyable event.

The entire student body is getting behind the annual staff now in securing ads for the Synapsis, and it is needless to say that their work is highly appreciated. The staff hopes to put out a model book, and everyone is getting anxious to see the finished product.

ATLAS CLUB

The Atlas members all seem to know of the special distinction this particular year commands, for they surely have leaped into the business of the year with unusual vigor. In regard to the exigencies placed upon them by what is popularly supposed to happen on this year's extra day, all of the fellows seem to have plenty of resistance. They all passed the "Chick" test with unusual immunity to the frequent exposures of this Leap Year.

Since the beginning of the year, Mastoid Chapter has been trying out a little different plan for some of its meetings. To further express the interfraternity spirit, some of the meetings have been thrown open to the attendance of the student body. Two of these open meetings have already been held. The results have proved the worth of the idea, and those outside the fraternity have joined in voicing appreciation of these meetings. More of them will be held in the future.

The fraternity was planning to present the Wortheim film of Obstetrics to the students and field doctors here this year, as it did several years ago, but it was deemed more appropriate for the O. L. A., the local obstetrical organization, to present this film. Mastoid Chapter, however, will join in the showing of this film to the local osteopathic physicians.

IOTA TAU SIGMA

The meetings of the past six weeks have been very successful and instructive to all the members of Iota Tau Sigma, as all our meetings are.

Dr. Zinn, of the school faculty, came out and gave us a very good talk at one of our meetings. The next Sunday, Mr. Lewis, of the Riggs Optical Co., gave us some very good pointers on the use of instruments. He also demonstrated the ophthalmoscope, the written description of which had always been Greek to the boys.

The following Sunday Dr. Yale Castilo, of Lakeside Hospital, came out and talked on ethics, which did a group of student doctors a world of good. At the last meeting held Dr. Marty, chief x-ray man at the Lakeside Hospital, gave us a very good talk on electricity and the use of the x-ray, which before had meant nothing to his hearers but pushing a button, seeing a lot of fire fly, and a picture. But this all means something now after having it explained.

Last but not least, this is hell week for the pledges, and next Friday night—well, it's just too bad!

KAPPA PSI DELTA

The Kappa Psi Delta has been having a busy season. The lunch room, operated under our supervision, has been very satisfactory and profitable, and the students and faculty have appreciated the home prepared food and pleasant environment.

The Lakeside Hospital was presented with a beautiful framed tapestry for the reception room, and the college was presented with mirrors for the treating rooms. In the last month we have initiated eight new members, and we consider ourselves very fortunate to have these fine women with us. Dr. Sappenfield arrayed them very cleverly and they served the dinner at our March meeting.

Mrs. Trigg, of the Women's Council of Clubs, gave us a most interesting and instructive address on the work of the Council of Clubs in managing the Girls' hotel. She spoke most highly of the work of our Kappa Psi Delta clinic at the hotel.

We are looking forward to a good representation at Kirksville this summer.

PHI SIGMA GAMMA

The Epsilon Chapter of the Phi Sigma Gamma fraternity has spent practically one of its most inactive months, as far as fraternity work is concerned. Our principal activities consisted of a Valentine dance for the benefit of the C. I. L., which was well represented by the faculty and student body, and an interfraternity dance given for the benefit of the basketball team, which was also well attended. March 4 we had a business meeting at the Broadview hotel, which was followed by a lecture on The Etiology and Prognosis of Syphilis, by Dr. E. C. Wyckoff. On March 18 the first degree will be given to the second semester pledges.

KIRKSVILLE COLLEGE OF OSTEOPATHY AND SURGERY

K. C. O. S. QUARTET SCORES BIG SUCCESS

Following the appearance of the K. C. O. S. Glee Club at radio station WOS, the station officials invited the quartet to take part in their sixth anniversary program on February 24. The program began in the afternoon and continued until four o'clock the next morning. During the evening the station's power was "stepped-up," by special permission of the Radio Board, until it went from coast to coast. During the program the phrase "Kirksville College of Osteopathy and Surgery" was repeated by the announcer more than two hundred times. Incidentally, the announcer at WOS is a Kirksville graduate, Dr. "Jack" Heine. Such programs as this will do much to spread the knowledge of the Kirksville college and of osteopathy. The quartet has been invited to participate regularly on this station's programs.

The quartet consists of Bumstead, Andrews, Wilson and Unger, and these men plan to tour the country during the summer. They will probably be billed in the vaudeville houses as "The Harmony Doctors" and will include on their program a short talk on osteopathy and the Kirksville college. The men are assuming considerable responsibility in planning this trip and will be very glad to have assistance from the field doctors. Anyone who is interested in having this quartet appear in their city during the summer is asked to correspond with Allen D. Bumstead, Kirksville, for dates.

BRANCH CLINICS PROVING SUCCESSFUL

The new plan of opening branch clinics in nearby towns has proved to be a big success. At present, regular clinics are held at Novinger and Greentop, and at both of these places the senior students, under faculty supervision, are gaining much valuable experience and acquainting the people with osteopathy. These two clinics handle more than seventy-five patients each clinic day and from this group many unusual cases are brought in for demonstration before the upper classes.

HOLD SPECIAL INFANTILE PARALYSIS CLINIC

Dr. E. L. Eichhorn, of Salisbury, Mo., favored the students of K. C. O. S. by bringing five cases of infantile paralysis to Kirksville for demonstration. During last fall, Dr. Eichhorn's community was visited by an ep.demic of infantile paralysis, and he had a splendid opportunity to demonstrate the efficiency of osteopathy. The five cases included those who had osteopathy early in their illness and some who had not been treated osteopathically until several months had elapsed. It was strikingly apparent that early treatment brought the best results.

SCHOLARSHIP DANCE

The annual dance in aid of Sigma Sigma Phi Scholarship Fund was held on March ninth. As was the case last year, this affair proved to be unusually successful and netted a substantial sum for that fund. Three local orchestras and a troupe from the Kennedy Theater provided the music and entertainment, and the huge gymnasium was crowded with dancers. The citizens of Kirksville have rallied in fine fashion to support the Scholarship Fund.

CARNIVAL PLANS PROGRESSING

The annual school carnival, supervised by the Press club and for the benefit of the Scholarship Fund, was held in the gymnasium on March 30 and 31. All of the organizations participate in this carnival and vie with each other to win the cup for making the most money for the Fund. Last year the cup was won by Alpha Tau Sigma. This year competition was even keener as several other organizations planned elaborate shows and concessions.

A parade is held each day of the carnival and the high enthusiasm generated by the parade, student cooperation and publicity, always makes the carnival a big date on the school calender.

PHILADELPHIA COLLEGE OF OSTEOPATHY

Dr. Francis A. Finnerty, Montclair, N. J., president of the Philadelphia College of Osteopathy Alumni Association, spoke at the noonday clinic on Wednesday, February 29, on Tuberculosis. He presented several cases, showing pathological chest conditions confirmed by physical laboratory and radiographic findings. Dr Finnerty's address had as much of practical importance as any we have had the good fortune of hearing this year.

Dr. Ralph L. Fischer and Dr. D. S. B. Pennock, both of the college faculty, spoke at the regular monthly meeting of the New Jersey Osteopathic Society, Saturday, March 3, at Trenton. Dr. Fischer spoke on Pneumonia, while Dr. Pennock's subject was Surgical Experience in Vienna.

The regular meeting of the E. G. Drew Obstetrical Society was held Tuesday evening, March 6. Dr. J. M. Eaton, of the senior class, presented a paper treating of Dystocia. The paper was well prepared and presented, and showed evidence of considerable study.

Dr. E. G. Drew introduced the speaker of the evening, Dr. H. B. Mills, professor of pediatrics, Temple University. Dr. Mills' talk was both interesting and instructive, emphasizing the more common ills of childhood and their treatment, and advancing many original ideas on feeding and clothing the child from birth to puberty. The meeting was well attended by the student body and several members of the faculty were present.

Dr. Edward A. Green, registrar of the college and professor of physiology, addressed the Northeastern Pennsylvania Osteopathic Society, Saturday, March 10, at Scranton, Pa. His subject was Research as Applied to the Osteopathic Principles.

Dr. H. V. Halladay, professor of anatomy, Des Moines Still College of Osteopathy, and nationally known demonstrator of applied anatomy and osteopathic technic, arrived on Tuesday, March 20, and spent the following three days teaching at the college prior to attending the E. O. A. Convention at New York City. Dr. Halladay was given a schedule of classes as well as a series of groups before whom he demonstrated technic. On Tuesday evening he demonstrated The Meaning of a Normal Spine at the college auditorium, at an open meeting.

State and Divisional News

OSTEOPATHIC CONVENTIONS

Announcements

American Osteopathic Association. A. T. Still Centennial Convention. Kirksville, Mo., week of August 6. Program chairman, Dr. Hubert J. Pocock, Toronto.

California State Convention. Riverside, May 31-June 2.

Florida State Convention. Tampa in May. Program chairman, Dr. M. G. Hunter.

Georgia State Convention, Albany. May 7, 8.

Illinois State Convention. Chicago, May 30-June 2. Program chairman, Dr. Earl J. Drinkall.

Michigan State Convention. Detroit, October 31-November 1.

New England Convention. Hotel Statler, Boston, May 18, 19. Program chairman, Dr. Perrin T. Wilson, Boston.

New York State Convention, Utica in October.

Ohio State Convention. Columbus, in May.

Rhode Island State Convention. Providence, in April.

South Dakota State Convention. Sioux Falls, in May.

Texas State Convention. Mineral Wells, May 7, 8. Program chairman, Dr. Mary Bedwell, Dallas.

CALIFORNIA

Berkeley

Dr. L. van H. Gerdine, president of the College of Osteopathic Physicians and Surgeons, and Dr. C. J. Gaddis were speakers at a dinner sponsored by the osteopathic physicians of Berkeley, February 28.

Citrus Belt Society

The February meeting was held on the 10th, at the Rainbow Trout Farm near Redlands. Dr. Kenneth Baber showed moving pictures of his surgical work at the osteopathic hospital at Los Angeles, of the mid-winter convention of the state osteopathic association, and of an eastern trip.

Dr. Edgar Zinn, physician in charge of the Porter Sanitarium at Palms, told of his work there. Announcement was made that the new osteopathic unit of the Los Angeles general hospital would be opened the next week.

Bay Society

"A Night in Hawaii" with travelogues, moving pictures and Hawaiian music, was announced as the feature of the February meeting on the 24th.

East Bay Society

Dr. L. van H. Gerdine was the chief speaker at the monthly meeting on February 28. He told of the completion of the osteopathic unit of the Los Angeles General Hospital and of the recent studies at the osteopathic Research Institute. Dr. C. J. Gaddis also spoke.

Oakland Osteopathic Luncheon and Study Club

The Oakland *Tribune* of March 5 told of the organization of the Osteopathic Luncheon Study Club which meets every Thursday at the Athens Athletic Club. The members take turns in presiding, as well as in serving as speaker of the day. Study and discussion are on scientific and professional subjects. Among the officers are: President, Dr. G. M. Peckham; vice-president, Dr. Lillian G. Harris; secretary and treasurer, Dr. Bessie Magid; directors, Dr. E. I. Kushner and Dr. Clara Miller.

Fresno

Drs. L. van H. Gerdine and C. J. Gaddis were speakers at a banquet on March 1.

Long Beach

Dr. Dain L. Tasker spoke on "X-ray in Diagnosis of Obscure Cases," on February 21. He was assisted by his wife, Dr. Cora N. Tasker.

Los Angeles

The March meeting on the 12th was addressed by Dr. P. T. Collinge on "Dental Infections." This was followed by a free for all discussion.

Riverside

A meeting was announced to be held on February 23 of osteopathic physicians and interested lay supporters for the purpose of effecting a permanent organization and choosing directors to guide the affairs of the new hospital, which it has been arranged will be housed in the former nurses' home of the Community Hospital.

San Diego

Dr. Carl P. McConnell addressed the San Diego osteopathic physicians at a dinner given in his honor on March 2.

Southern California Osteopathic Golf Association

Dr. Charles Finley, Pasadena, was in charge of the monthly tournament played at the Pasadena Golf Club, Febraury 9.

COLORADO

Northern District

A luncheon was held in Longmont, January 28, and a meeting in the offices of Dr. W. R. Benson.

Eastern Association

The meeting held at the Waldorf-Astoria, New York City, March 23 and 24, was too late to be reported more fully in this month's JOURNAL.

FLORIDA

Dade County Society

The Dade County Society entertained at a banquet March 1, in honor of the members of the State Board of Osteopathic Medical Examiners, which was holding its regular sessions in Miami. A surgical clinic was conducted the next day under the direction of the society.

Duval County Society

The February meeting was held in Jacksonville, February 13. Dr. R. H. Singleton, Cleveland, secretary of the American Osteopathic Foundation, outlined the plans of that institution.

Orange County

The February meeting was held in Orlando on the 11th. The honor guest was Dr. R. H. Singleton, Cleveland, who outlined the plans of the American Osteopathic Foundation.

IDAHO

Boise Valley Society

The February meeting was held on the 9th, in Nampa, according to advance announcement. The program included papers by Dr. Carrie Freeman, Boise, on "Asthma," and Dr. O. I. Cochran, Boise, on "Subluxations."

ILLINOIS

Chicago

The March meeting was postponed one week from the regular night to allow members to attend the district meeting at Aurora. The March meeting, therefore, was held on the 8th, with a lecture by Dr. John Deason, illustrated by moving pictures of his trip through the Yukon country.

Rockford Society

Dr. Will O. Medaris read a paper on keeping the lymphatic stream active in diseases of the head and neck at the March meeting held on the 1st, in the offices of Dr. N. W. Shellenberger.

First District

A meeting was held in Aurora, March 1. Drs. R. N. MacBain and W. A. Schwab of the Chicago College were the principal speakers.

Fifth District

A meeting was held in Champaign, February 23. Dr. R. N. MacBain of Chicago was the principal speaker.

Sixth District

Clinics on diseases of the ear and of the feet held a prominent place on the sixth district program at Springfield, February 29. Dr. Nelle Lowe Parker, Carlinville, was in charge of the ear clinic, and Dr. Albert N. Ovens, Springfield, assisted by Dr. L. K. Hallock, Roodhouse, handled the foot clinic. Dr. Charles E. Kalb, Springfield, led the round-table discussion at the dinner which followed.

Sixth District—West Side

A meeting was held at the home of Dr. L. E. Staff, Jacksonville, February 17.

IOWA

Ottumwa

The Ottumwa Osteopathic Society was formed February 14 at a meeting held in the offices of Dr. Elizabeth Thompson. Officers elected were: President, Dr. A. D. Morrow; secretary-treasurer, Dr. Ethel Becker.

At the first regular meeting there was an address on "High Blood Pressure," by Dr. A. F. Steffen, Bloomfield.

KANSAS

State Society

The Kansas Society has begun the publication of a bulletin, evidently edited by the secretary, and containing valuable information about the state organization and smaller ones within the state. Number three contained messages from the state chairmen of the Bureaus of Clinics, of Publicity, of Hospitals, of Legislation and of Statistics.

Cowley County

Mastoiditis and otitis media were the subjects discussed at a meeting held in the office of Dr. J. F. Tout at Wellington, February 23. Drs. C. A. Tedrick and E. C. Brann of the Southwestern Osteopathic Hospital, Wichita, were the speakers.

Verdigris Valley

The February meeting was held at the offices of Drs. Bell and Bell on the 7th. Subjects for discussion had to do with office management.

A study of diet marked the March meeting on the 6th, at which time a letter was sent to the congressmen from that part of Kansas regarding legislation for the district of Columbia and plans were made to attend the April clinic at the Southwestern Osteopathic Sanitarium.

Wichita

The Wichita Society held its second clinic day on February 9 at the Southwestern Osteopathic Sanitarium and Hospital. The forenoon was devoted to surgical operations by Drs. Wallace and Brann and physical diagnosis by Dr. W. S. Corbin. During the afternoon, Dr. Margaret Jones of Kansas City College of Osteopathy lectured on obstetrics. About forty-five osteopathic physicians were in attendance. These clinics are held every two months.

KENTUCKY

Jefferson County

Meetings were held on February 14 and February 29 at the Bush-Bandeen Osteopathic Sanitarium. It is announced that a special study group will take up the cardiovascular system during the next four months. The following were speakers at the February 29 meeting: Dr. A. B. Patterson, "Embryological Development of the Heart"; Dr. R. H. Miller, "Blood and Nerve Supply of the Heart," and Dr. A. B. Johnson, "Autonomic System in Control of the Heart and Blood Vessels."

MICHIGAN

Flint Society

At the January meeting $685 was pledged by individuals and $25 by the society toward the state legal and legislative fund.

South Central District

Newspapers of Jackson gave very good notice to the district meeting held in Jackson, March 1. This organization holds monthly banquets, attended by from 30 to 100, the programs being in the nature of get-together meetings

with informal discussions, according to Dr. Raymond Staples.

MISSOURI

Central District

The February meeting was held in Mexico, with a banquet and addresses by Dr. George M. Laughlin, Kirksville, Dr. J. H. Hardy, Columbia, and Dr. Chan B. Ewing, Jefferson City.

MONTANA

Great Falls

The osteopathic view of the cancer problem as put forth by the A. T. Still Research Institute was discussed by Dr. E. L. Bergstrom at a recent meeting of the Great Falls Society.

NEW JERSEY

At the March meeting on the 3rd, Dr. R. L. Fischer, professor of physical diagnosis, cardiovascular and respiratory diseases at the Philadelphia College, spoke on "Pneumonia," and Dr. D. S. Pennock, professor of surgery at the Philadelphia College and surgeon-in-chief at the hospital, spoke on "Surgical Experiences in Vienna."

Dr. Edward H. Gibbs, East Orange, has resigned as secretary of the state society, and has been succeeded by Dr. Tyce Grinwis, 178 Maplewood avenue, Maplewood.

NEW YORK

Utica

Local committees for the state convention to be held in October were chosen on February 16. Dr. Carl D. Clapp is chairman of the General Convention Committee and the others are as follows: Program, Dr. Horace Miller; exhibits, Dr. William Burton; entertainment, Dr. Elmer Schmitt; publicity, Dr. A. C. Hughes.

Hudson River North

The March meeting was held on the 3rd at the offices of Dr. Frances Perry in Troy. The program included addresses by Dr. Albert W. Bailey, Schenectady, on "Exercises of the Eye," and Dr. Leason Johnson, Troy, on "Asthma."

OHIO

Central District

Dr. Arthur S. Hulett, secretary, reports that the February meeting was held in Columbus on the 23rd. There were addresses by Dr. Mark M. Loveland, Bucyrus, on "Headaches and Their Treatment," and by Catherine McL. Scott, Columbus, on "Dysmenorrhea from an Osteopathic Standpoint."

Dayton District

It was announced that the March meeting would be held in Dayton on the 1st, with an address by Dr. Charles M. La Rue, Columbus, on "Vincent's Angina."

Lorain County

Dr. Percy E. Roscoe of the Osteopathic Clinic of Cleveland, addressed the February meeting at Lorain on the 23rd.

Middletown

Dr. P. K. Jones spoke on "Osteopathic Treatment in Infectious Diseases" at the March meeting on the 7th.

Southern District

The monthly meeting was held in Cleveland, February 18. Dr. Charles M. La Rue, Columbus, spoke on "Pathology of the Nose and Throat," according to the program as published in advance.

Dr. J. M. Dyer, Cleveland, is president of the society.

PENNSYLVANIA

Philadelphia

At the regular monthly meeting on March 15, the program as published in advance included Dr. Eugene R. Kraus, New York City, on "Diagnosis and Treatment of Diseases of the Stomach," with special reference to x-ray and illustrated by x-ray plates; Dr. Charles J. Muttart, Philadelphia, on "Proctology."

Dr. H. V. Halladay, Des Moines Still College of Osteopathy, was announced to give an address and spinal demonstration at the college auditorium, March 20, as a part of the Normal Spine Week program.

Northeastern District

Following a short business meeting, Dr. A. G. Walmsley, Bethlehem, addressed the monthly meeting held February 11 in the offices of Dr. F. L. Bush, Wilkes-Barre.

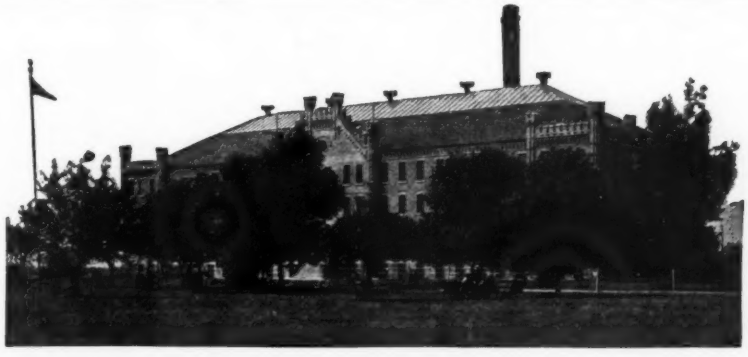
RHODE ISLAND

Dr. Myron B. Barstow, Boston, spoke on "Osteopathic Problems Encountered in Acute Practice" at the March meeting held on the 8th. Dr. Hazel G. Axtell spoke on "Education of New Members for the Profession."

TEXAS

Dallas

Dr. Charles F. Kinney, president of the state society, gave a luncheon at his home on February 19, to the trustees of the state society, the legislative committee, and the osteopathic members of the state board of medical examiners.



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WASHINGTON

Yakima Valley

A meeting was held in Sunnyside, February 18.

WEST VIRGINIA

Monongahela Valley

Drs. J. Donley Miller and Harry I. Miller, Morgantown, were hosts to the monthly meeting held February 8th. The latter read a paper on "Treatment of the Throat," and the former discussed and demonstrated "Osteopathic Technic."

WISCONSIN

Madison District

Dr. Ernest Bond, Milwaukee, spoke at the monthly meeting held February 16, on "Things I Have Learned in 25 Years of Experience." Dr. C. R. Sannes, Madison, spoke on "Bloodless Orificial Surgery."

Milwaukee District

Dr. W. B. Truax reports that Dr. J. P. Koehler, Milwaukee city commissioner of health, spoke at the meeting on March 1, expressing his desire to cooperate in every way with the local osteopathic physicians, and assuring them that the health department is always at their service.

CANADA

Ontario—Toronto Society

Dr. H. V. Sutton, Hamilton, spoke on "Tonsils, Should They Be Removed?" at the February meeting, held on the 17th in the offices of Dr. W. L. Durnan.

RECIPROCITY

Osteopathic physicians are always glad to favor those who contribute to the advertisement of the osteopathic cause.

The Ultima Physical Appl'ance Co. has consistently advertised in osteopathic publications for many years. The fact that they are willing to come out in the open and advertise to the profession they solicit can be taken as evidence of their sincerity. They do not deluge your mail with their product and then hesitate to advertise in your JOURNAL.

Many leading osteopathic physicians, such as Dr. Wesley Barrett of Los Angeles, Calif., and others, have used the Sinustat for years, and it will pay all readers of THE JOURNAL to investigate this worthy device.

OSTEOPATHIC PUBLICITY THROUGH THE BUSINESS OFFICE

SHOE DEALERS COOPERATE

The Lape & Adler Company have been co-operating very consistently with the osteopathic profession. We are pleased to note that they have been sending letters to retail shoe dealers throughout the country who sell "Foot-Friend" shoes, urging them to get in touch with the local osteopathic physicians. The following paragraphs, taken from one of their letters, give an idea of the good work they are doing on behalf of osteopathy:

"We believe that if you will call on this doctor you will find that he is interested in seeing Foot-Friend Shoes and will prescribe them in all cases of foot trouble which he handles. Always stress the point that you will properly fit the feet that he refers to you. If an arrangement can be made to hold free foot clinics in your store, it will bring you business and give the doctor good advertising. You can also refer to him any people who really need medical attention.

"In this connection it is our opinion that osteopathic physicians are particularly qualified to aid foot troubles, as they are skilled in the manipulation and setting of misplaced bones, tendons and muscles. This treatment also promotes proper circulation. Foot-Friends keep the bone structure supported, while they also exercise and permit freedom of movement for the muscles and tendons. Foot-Friends keep normal feet healthy and assist ailing feet to regain their health."

If you will note the Lape & Adler Company ads in both the JOURNAL and MAGAZINE, you will notice that they are full of osteopathic principles and philosophy.

All of this came about through the suggestion of the A. O. A. Business Manager to the General Sales Manager of the Lape & Adler Company, who in reply to our letter stated:

"You made the suggestion to us last week that we boost the osteopath in every way consistent with our policies and we are enclosing a letter which we are sending to our retail dealers. We made this about as strong as we possibly could, and feel sure that the osteopathic physician will receive more than his share of the business referred to physicians by shoe dealers."

This is not the only shoe concern to co-operate with us. The Cantilever Corporation has always worked with and for us. In addition to being regular advertisers and exhibitors, they have published numerous booklets for free distribution that have been written by osteopathic physicians.

Business houses that give us such friendly support and co-operation are entitled and should receive our patronage.

C. N. C.

CHANGES OF ADDRESS

Achor, Clara Farr, from 910 Main Ave., to 113½ Center Ave., Brownwood, Texas.

Adams, L. S., from Fredonia, Kans., to 837 First Nat'l Bank Bldg., Wichita, Kans.

Airey, Grace Stratton, from 823 South N. Hampshire Ave., to 2000 Glendon Ave., Palms Station, Los Angeles, Calif.

Baird, Douglas M., from Minneapolis, Minn., to 225 Ashland Ave., Detroit. Mich.

Beaven, J. M., from Kirksville, Mo., to 403 Okmulgee Bldg., Okmulgee, Okla.

Beemer, W. M., from Kirksville. Mo., to 198 W. St. Clair, Romeo, Mich.

Black, Campbell and Jessie M. Coons, from Harold & William Firth Bldg., to Orange House, Reid St., Hamilton, Bermuda.

Bledsoe, Amorette, from 212 Odd Fellows Bldg., to 713 Odd Fellows Bldg., Raleigh, N. C.

Bowling, R. W., from 821 San Fernando Bldg., to 400 Black Bldg., Fourth and Hill Sts., Los Angeles, Calif.

Buehler, John B., from 1036 S. Burlington Ave., to 608 S. Westlake Ave., Los Angeles, Calif.

Buirge, Raymond E., from Mason City, Iowa, to c/o General Delivery, Philadelphia, Pa.

Bupp, W. I., from Kirksville, Mo., to Ridgeway, Mo.

Cain, C. N., from 414 Central Bldg., to 406 Medical Arts Bldg., Ft. Wayne, Ind.

Connor, Mary Houghton, from Chicago, Ill., to 6714½ Sunset Blvd., Hollywood, Calif.

Comstock, Edgar S., from 808 First Nat'l Bldg., to 468 Vernon St., Oakland, Calif.

Copp, Orrin G., from Upper Darby, Pa., to 1118 Chestnut St., Philadelphia, Pa.

Cradit, L. V., from Blackburn Bldg., to 406-07 Oliver-Eakle Bldg., Amarillo, Tex.

Dahl, Alexander, from Kirksville, Mo., to 616 N. Highland Ave., N. E., Atlanta, Ga.

Davis, Lloyd W., from Long Beach, Calif., to 129 N. Sickel St., Los Angeles, Calif.

Davis, Myrtle A., from Englewood, Colo., to Johnstown, Colo.

Dodge, Paul James, from Concord, N. H., to 228 Rochambeau Ave., Corner Hope St., Providence, R. I.

Eitel, Charles R., from 205 Palace Bldg., to 307 Palace Bldg., Tulsa, Okla.

Elwell, M. Lawrence, from Times Union Bldg., to 609 Terminal Bldg., 65 Broad St., Rochester, N. Y.

Fuller, J. L., from Bethlehem, Pa., to 521 Butler Ave., Ambler, Pa.

George, Lizabeth de Laittre, from Markwell Bldg., to 902 Heartwell Bldg., Long Beach, Calif.

Gibbs, Edward H., from South Orange, N. J., to 37-20 Eighty-first St., Jackson Heights, N. Y.

Haseltine, Elina M., from Lebanon, Mo., to 3 Stephenson Block, Second Ave. South, Saskatoon, Sask., Can.

Heasley, C. Denton, from 209 Palace Bldg., to 611-12 Palace Bldg., Tulsa, Okla.

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Henson, J. C., from St. Louis, Mo., to Laughlin Hospital, Kirksville, Mo.

Hess, Charles A., from Fostoria, Ohio, to 1½ Gordon St., E., Savannah, Ga.

Hill, Margaret A., from Mt. Airy, Pa., to New Iroquois Hotel Bath Dept., South Carolina Ave. and Beach, Atlantic City, N. J.

Hodgkin, J. V., from Benkelman, Nebr., to 16-18 Clapp Bldg., McCook, Nebr.

Hook, J. Henry, from Chehalis, Wash., to 909-10 Fidelity Bldg., Tacoma, Wash.

Hoover, Harold V., from 5400 Ellis Ave., to 5250 Ellis Ave., Chicago, Ill.

James, B. Harwood, from Foster Bldg., to New Post Office Bldg., Beckley, W. Va.

Jaquith, L. E. and H. C., from Confederation Life Bldg., to Room 517, 4 Richmond St., E., Toronto, 2, Ont., Canada.

Kelley, Dorsey M., from Hollywood, Calif., to 778 Marsh St., San Luis Obispo, Calif.

Ketner, W. A., from Franklin, Pa., to Sligo, Pa.

Kramer, H. H., from Des Moines, Ia., to Steamboat Rock, Iowa.

MacGeorge, Florence E., from Bordighera, Italy, to Commodore Apts., No. 409, 56 Maitland St., Toronto, Ont., Canada.

Marquand, P. C., from Keyser, W. Va., to 512½ Main St., Point Pleasant, W. Va.

Miller, R. Lee, from Knoxville, Tenn., to 1003 Wallace Bldg., Tampa, Fla.

Moore, Fred E., from Nice, France, to c/o Equitable Trust Co., 23 Rue de la Paix, Paris, France.

Morris, James I., from 308-09 Barth Bldg., to 1554 California St., 308 McClintock Bldg., Denver, Colo.

Office, Manley R., from Columbus, Ohio, to 9530 Jos. Campau, Hamtramck, Mich.

Peckham, H. E., from Denver, Colo., to Evergreen, Colo.

Reiter, Laurence A., from 209 Palace Bldg., to 611-12 Palace Bldg., Tulsa, Okla.

Rudnick, Macy M., from Keyport, N. J., to 641 Central Ave., East Orange, N. J.

Sawyer, J. Harlan, from Melrose, Mass., to 102 Forest St., Medford, Mass.

Scharff, Albert O., from Hawaiian Trust Bldg., to 425-26 Damon Bldg., Honolulu, Hawaii.

Scott, Norla, from Oak Grove, Mo., to 510 Citizens Nat'l Bank Bldg., Emporia, Kans.

Scott, W. E., from 34 Augusta St., to 104 Ladson St., Greenville, S. Car.

Smedley, R. Damon, from Narberth, Pa., to Corner Market and Donegal St., Mt. Joy, Pa.

Smith, J. Francis, from West St. John, N. B., Canada, to 1802 Green St., Philadelphia, Pa.

Smith, M. M., from Kirkwood Bank Bldg., to Woodlawn Hotel, Kirkwood, Mo.

Squier, L. W., from Portland, Ore., to 8057 Bothel Way, Seattle, Wash.

Stanfield, L. M., from Kirksville, Mo., to Box 481, Perry, Okla.

Still, Vernon F., from Cranford, N. J., to 405 Westminster Ave., Elizabeth, N. J.

Strong, Leonard V., from 25 7th Ave., to 78 Eighth Ave., Brooklyn, N. Y.

Tindall, W. L., from Montezuma, Ia., to Box 192, Fonda, Iowa.

Tucker, E. DeVer, from 1711 Spruce St., to 1819 N. Park Ave., Philadelphia, Pa.

Unverferth, E. C., from 1310 Main St., to 307 Palace Bldg., Tulsa, Okla.

Vick, Lester J., from 235 Blackburn Bldg., to 406-07 Oliver Eakle Bldg., Amarillo, Texas.

Wallace, Iva Still, from 401 Rowell Bldg., to 804 Bank of Italy Bldg., Fresno, Calif.

Wallace, Raymond, from Winfield, Kans., to Caldwell, Kans.

Welch, H. A., from Joplin Nat'l Bank Bldg., to 216-18 Frisco Bldg., Joplin, Mo.

Werst, Weston H., from 125 E. Third St., to 702 N. Main St., Corner North and Main St., Bethlehem, Pa.

Wiewel, Philomena C., from Wells, Minn., to 2109 Avenue A., Council Bluffs, Iowa.

Withers, Avis M., from 316 Professional Bldg., to 719 Professional Bldg., Jacksonville, Fla.

Wolfe, V. B., from Walkerton, Ind., to 583 Broadway, Gary, Ind.

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DENTAL SURGERY DEPT. .....(Conservative)
RADIOLOGY DEPT. .....(Snook—Coolidge and Radium)
LABORATORIES DEPT. .....(Tissue—Blood Chemistry—General Chemistry)
METABOLISM (BASAL) DEPT. .....(Boothby-Tissot and Krogh-Haldane-Sanborn)

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Pape, Ernest H., 2200 Grove St., Berkeley.
Mauer, Annie, 1918 N. Edgemont St., Hollywood.
McConaughy, Mary Alice, 421 Detwiler Bldg., Los Angeles.
Nitta, Matsutara, 317½ E. First St., Los Angeles.
Wyckoff, Louis E., 610 S. Broadway, Los Angeles.
Snare, John P., Beard Bldg., 910½ 10th St., Modesto.
Kohlmeyer, Paul R., 1396 N. Lake Ave., Pasadena.
Neugebauer, William Fay, 455 E. Washington St., Pasadena.
Pierce, Nellie M., 3570 Granada Ave., San Diego.
Wimpress, Chas. H., 2201 Euclid Ave., Upland.
Gotsch, Otto H., 300 Lettunich Bldg., Watsonville.

Connecticut

Riley, Benjamin F., 121 Whitney Ave., New Haven.

Florida

Sigler, W. D., 423, 24 Calumet Bldg., Miami.

CANADA

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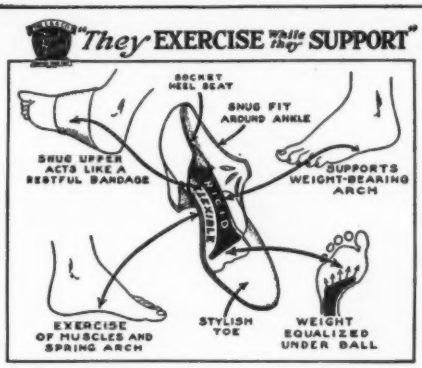

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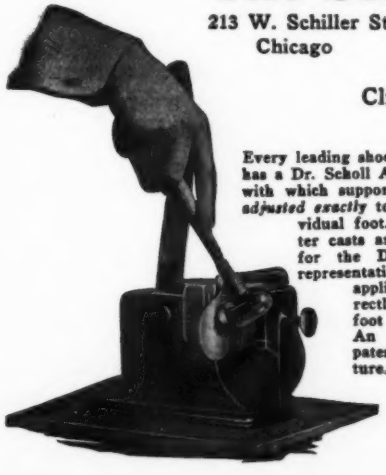

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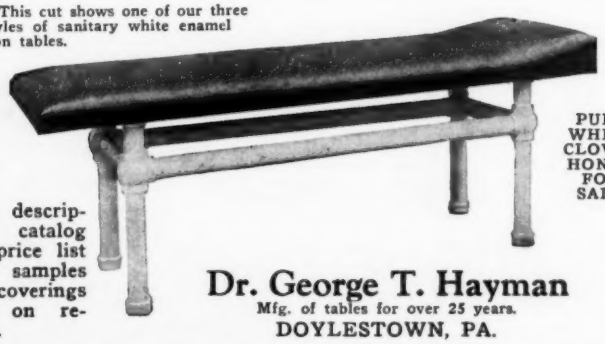

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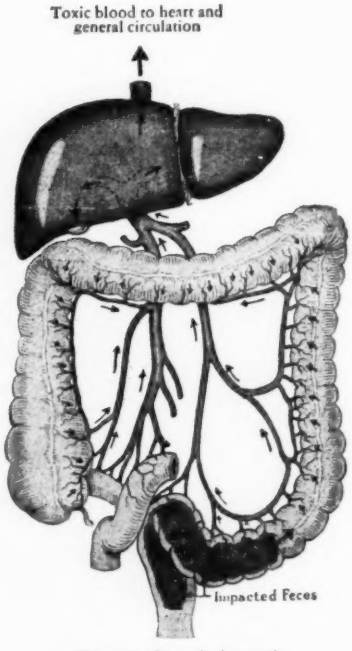

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